

=> file reg

FILE 'REGISTRY' ENTERED AT 11:10:44 ON 10 OCT 2003  
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=> display history full 11-

FILE 'REGISTRY' ENTERED AT 09:24:26 ON 10 OCT 2003

L1 196332 SEA (?BENZOTHIAZYL? OR ?BENZOTRIAZYL? OR ?BENZOTHIAZOL?  
OR ?BENZOTRIAZOL?)/CNS  
E DIPHENYLACRYLATE/CN  
E DIPHENYL ACRYLATE/CN  
E DIPHENYLACRYLIC  
L2 127 SEA ?DIPHENYLACRYL?/CNS  
E POLYVINYL CHLORIDE/CN  
L3 1 SEA "POLYVINYL CHLORIDE"/CN

FILE 'LCA' ENTERED AT 09:36:49 ON 10 OCT 2003

L4 179 SEA (SHOCK OR VIBRAT? OR IMPACT? OR ELECTROMAG? OR  
PIEZOELEC?) (2A) (DAMP? OR ABSORP? OR ABSORB? OR PROOF? OR  
RESIST? OR RESILIEN?) OR SHOCKPROOF? OR VIBRATIONPROOF?  
OR IMPACTPROOF? OR SHOCKRESIST? OR VIBRATIONRESIST? OR  
IMPACTRESIST?  
L5 0 SEA SHOCKRESILIEN? OR VIBRATIONRESILIEN? OR IMPACTRESILIE  
N?

FILE 'HCA' ENTERED AT 09:40:02 ON 10 OCT 2003

L6 69425 SEA L4 OR L5 OR SHOCKPROOF?  
L7 123078 SEA DIPOLAR? OR DIPOLE#  
L8 162222 SEA MOMENT#  
L9 1656 SEA MOMENT#(2A) (ACTIVAT? OR IMPROV? OR STABIL? OR STABL?  
OR MODIF? OR APPRECIATOR? OR BOOST? OR SUPPRESS? OR  
ENHANC? OR INHIBIT? OR DEACTIVAT? OR ACCELEA? OR  
DEACCELEA?)  
L10 12556 SEA SHOCKSUPPRESS? OR VIBRATIONSUPPRESS? OR IMPACTSUPPRES  
S? OR (SHOCK? OR VIBRAT? OR IMPACT?) (2A) (SUPPRESS? OR  
INHIBIT? OR HINDER? OR IMPED? OR ARREST? OR REDUC? OR  
REDN# OR RETARD? OR PROHIBIT? OR PREVENT? OR BLOCK? OR  
ELIMINAT?)  
L11 109936 SEA L3 OR PVC# OR POLYVINYLCHLORIDE# OR POLYVINYL##(2A)CH  
LORIDE# OR POLY(2A) (VINYLCHLORIDE# OR VINYL##(2A)CHLORIDE  
#)  
L12 92896 SEA L1 OR L2 OR ?BENZOTHIAZYL? OR ?BENZOTRIAZYL? OR  
?BENZOTHIAZOL? OR ?BENZOTRIAZOL? OR ?DIPHENYLACRYL? OR  
DIPHENYL? (2A) (ACRYLIC? OR ACRYLAT?)

FILE 'HCAPLUS' ENTERED AT 09:59:01 ON 10 OCT 2003

L13 4468 SEA AOKI T?/AU  
L14 19698 SEA SATO T?/AU

L15 19 SEA L13 AND L14  
L16 753381 SEA SHOCK OR VIBRAT? OR IMPACT? OR ELECTROMAG? OR  
PIEZOELEC?  
L17 4 SEA L15 AND L16  
L18 860 SEA (L13 OR L14) AND L16  
L19 371366 SEA RUBBER?  
L20 91 SEA L18 AND L19  
L21 126790 SEA DIPOLE# OR DIPOLAR?  
L22 167080 SEA MOMENT#  
L23 2 SEA L20 AND (L21 OR L22)  
L24 9 SEA L18 AND (L21 OR L22)  
L25 12 SEA L17 OR L23 OR L24

FILE 'HCA' ENTERED AT 10:08:02 ON 10 OCT 2003

L26 571 SEA (L6 OR L10) AND (L7 OR L8)  
L27 197 SEA (L6 OR L10) AND L7 AND L8  
L28 15 SEA L26 AND L9  
L29 13 SEA L27 AND L9  
L30 10 SEA L26 AND L11  
L31 7 SEA L27 AND L11  
L32 25 SEA L26 AND L12  
L33 23 SEA L27 AND L12  
L34 366120 SEA RUBBER?  
L35 9 SEA (L28 OR L29 OR L30 OR L31 OR L32 OR L33) AND L34

FILE 'REGISTRY' ENTERED AT 10:13:47 ON 10 OCT 2003

E POLYETHYLENE/CN  
L36 1 SEA POLYETHYLENE/CN  
E POLYPROPYLENE/CN  
L37 1 SEA POLYPROPYLENE/CN  
E ETHYLENE-VINYL ACETATE COPOLYMER/CN  
L38 2 SEA "ETHYLENE-VINYL ACETATE COPOLYMER"/CN OR "ETHYLENE-VI  
NYL ACETATE POLYMER"/CN OR "ETHYLENE-VINYL ACETATE  
RUBBER"/CN  
E PMMA/CN  
L39 1 SEA PMMA/CN  
E POLYVINYLIDENE FLUORIDE/CN  
E VINYLIDENE FLUORIDE HOMOPOLYMER/CN  
L40 1 SEA "VINYLIDENE FLUORIDE HOMOPOLYMER"/CN  
E POLYISOPRENE/CN  
L41 1 SEA POLYISOPRENE/CN  
E POLYSTYRENE/CN  
L42 1 SEA POLYSTYRENE/CN  
E STYRENE-BUTADIENE-ACRYLONITRILE COPOLYMER/CN  
L43 1 SEA "STYRENE-BUTADIENE-ACRYLONITRILE COPOLYMER"/CN  
E STYRENE-ACRYLONITRILE COPOLYMER/CN  
L44 1 SEA "STYRENE-ACRYLONITRILE COPOLYMER"/CN  
L45 10 SEA (L36 OR L37 OR L38 OR L39 OR L40 OR L41 OR L42 OR  
L43 OR L44)

FILE 'HCA' ENTERED AT 10:22:39 ON 10 OCT 2003

L46 378700 SEA L45

L47 26 SEA L26 AND L46  
 L48 16 SEA L27 AND L46  
 L49 15 SEA (L6 OR L10) AND L9  
 L50 6 SEA L49 AND L46  
 L51 11 SEA L49 AND L12  
 L52 14 SEA L47 AND L12  
 L53 14 SEA L48 AND L12  
 L54 661 SEA (L6 OR L10) AND L12  
 L55 449 SEA L54 AND (L46 OR L11 OR RUBBER?)  
 L56 217 SEA L54 AND L46  
 L57 48 SEA L54 AND L11  
 L58 361 SEA L54 AND RUBBER?  
 L59 14 SEA L56 AND (L7 OR L8)  
 L60 7 SEA L57 AND (L7 OR L8)  
 L61 9 SEA L58 AND (L7 OR L8)

FILE 'HCAPLUS' ENTERED AT 10:28:02 ON 10 OCT 2003

L62 7 SEA L25 AND (1907-1999/PY OR 1907-1999/PRY)

FILE 'HCA' ENTERED AT 10:28:24 ON 10 OCT 2003

L63 12 SEA L31 OR L35 OR L50 OR L60 OR L61  
 L64 17 SEA (L28 OR L29 OR L30 OR L48 OR L51 OR L52 OR L53 OR  
 L59) NOT L63  
 L65 14 SEA (L32 OR L33 OR L47) NOT (L63 OR L64)  
 L66 5 SEA L63 AND (1907-1999/PY OR 1907-1999/PRY)  
 L67 13 SEA L64 AND (1907-1999/PY OR 1907-1999/PRY)  
 L68 9 SEA L65 AND (1907-1999/PY OR 1907-1999/PRY)

FILE 'WPIX, JAPIO' ENTERED AT 10:40:29 ON 10 OCT 2003

L69 158646 SEA L10 OR L6

L70 90055 SEA L10 OR L6

TOTAL FOR ALL FILES

L71 248701 SEA L10 OR L6

L72 6311 SEA DIPOLE# OR DIPOLAR?

L73 1791 SEA DIPOLE# OR DIPOLAR?

TOTAL FOR ALL FILES

L74 8102 SEA DIPOLE# OR DIPOLAR?

L75 46599 SEA MOMENT#

L76 23036 SEA MOMENT#

TOTAL FOR ALL FILES

L77 69635 SEA MOMENT#

L78 939 SEA MOMENT#(2A) (ACTIVAT? OR IMPROV? OR STABIL? OR STABL?  
 OR MODIF? OR APPRECIATOR? OR BOOST? OR SUPPRESS? OR  
 ENHANC? OR INHIBIT? OR DEACTIVAT? OR ACCELEA? OR  
 DEACCELEA?)

L79 280 SEA MOMENT#(2A) (ACTIVAT? OR IMPROV? OR STABIL? OR STABL?  
 OR MODIF? OR APPRECIATOR? OR BOOST? OR SUPPRESS? OR  
 ENHANC? OR INHIBIT? OR DEACTIVAT? OR ACCELEA? OR  
 DEACCELEA?)

TOTAL FOR ALL FILES

L80 1219 SEA L9

L81 297117 SEA L11 OR RUBBER?

L82 129625 SEA L11 OR RUBBER?  
TOTAL FOR ALL FILES  
L83 426742 SEA L11 OR RUBBER?  
L84 18623 SEA L1 OR L2 OR ?BENZOTHIAZYL? OR ?BENZOTRIAZYL? OR  
?BENZOTHIAZOL? OR ?BENZOTRIAZOL? OR ?DIPHENYLACRYL? OR  
DIPHENYL?(2A)(ACRYLIC? OR ACRYLAT?)  
L85 4338 SEA L1 OR L2 OR ?BENZOTHIAZYL? OR ?BENZOTRIAZYL? OR  
?BENZOTHIAZOL? OR ?BENZOTRIAZOL? OR ?DIPHENYLACRYL? OR  
DIPHENYL?(2A)(ACRYLIC? OR ACRYLAT?)  
TOTAL FOR ALL FILES  
L86 22961 SEA L12  
L87 31 SEA L69 AND L78  
L88 28 SEA L70 AND L79  
TOTAL FOR ALL FILES  
L89 59 SEA L71 AND L80  
L90 1 SEA L87 AND L72  
L91 0 SEA L88 AND L73  
TOTAL FOR ALL FILES  
L92 1 SEA L89 AND L74  
L93 27 SEA L69 AND L72 AND L75  
L94 21 SEA L70 AND L73 AND L76  
TOTAL FOR ALL FILES  
L95 48 SEA L71 AND L74 AND L77  
L96 2 SEA L87 AND L81  
L97 0 SEA L88 AND L82  
TOTAL FOR ALL FILES  
L98 2 SEA L89 AND L83  
L99 1 SEA L87 AND L84  
L100 0 SEA L88 AND L85  
TOTAL FOR ALL FILES  
L101 1 SEA L89 AND L86  
L102 8 SEA L93 AND L81  
L103 9 SEA L94 AND L82  
TOTAL FOR ALL FILES  
L104 17 SEA L95 AND L83  
L105 6 SEA L69 AND (L72 OR L75) AND L81 AND L84  
L106 5 SEA L70 AND (L73 OR L76) AND L82 AND L85  
TOTAL FOR ALL FILES  
L107 11 SEA L71 AND (L74 OR L77) AND L83 AND L86  
  
FILE 'WPIX' ENTERED AT 10:52:33 ON 10 OCT 2003  
L108 11 SEA L90 OR L96 OR L99 OR L102 OR L105  
  
FILE 'JAPIO' ENTERED AT 10:55:37 ON 10 OCT 2003  
L109 9 SEA L103 OR L106  
L110 7 SEA L109 AND (1907-1999/PY OR 1907-1999/PRY)  
  
FILE 'WPIX' ENTERED AT 10:57:24 ON 10 OCT 2003  
L111 10 SEA L108 AND (1907-1999/PY OR 1907-1999/PRY)

=> file japio

FILE 'JAPIO' ENTERED AT 11:10:57 ON 10 OCT 2003  
COPYRIGHT (C) 2003 Japanese Patent Office (JPO) - JAPIO

FILE LAST UPDATED: 2 SEP 2003 <20030902/UP>  
FILE COVERS APR 1973 TO MAY 30, 2003

=> d l110 1-7 ibib abs ind

L110 ANSWER 1 OF 7 JAPIO (C) 2003 JPO on STN  
ACCESSION NUMBER: 1998-215907 JAPIO  
TITLE: SHOE SOLE  
INVENTOR: OHIRA YASUYUKI; HORI MITSUO  
PATENT ASSIGNEE(S): CCI CORP  
PATENT INFORMATION:

PATENT NO	KIND	DATE	ERA	MAIN IPC
JP 10215907	A	19980818	Heisei	A43B013-18

APPLICATION INFORMATION

STN FORMAT: JP 1997-22846 19970205  
ORIGINAL: JP09022846 Heisei  
PRIORITY APPLN. INFO.: JP 1997-22846 19970205  
SOURCE: PATENT ABSTRACTS OF JAPAN (CD-ROM), Unexamined  
Applications, Vol. 1998

AN 1998-215907 JAPIO

AB PROBLEM TO BE SOLVED: To surely absorb and relieve the impact from a road surface and to impart the excellent **impact absorption** performance of the unpredictable extent as compared to the conventional shoe soles by using an **impact absorptive** member compounded with the active components to increases the **dipole moment** quantity in a base material in the base material.  
SOLUTION: The shoe sole 11 comprises a multilayered shoe sole 16 consisting of a thin and soft insole 13 on the lower side of a vamp 12, a midsole 14 which is laid on the lower side of the insole 13 and consists of the **impact absorptive** member and an outsole 15 which is disposed on the lower side thereof and has high wear **resistance**. The **impact absorptive** member formed by compounding the active components to increase the **dipole moment** quantity in the base material into the base material is used for the midsole 14. The adequate examples of the base material components include **polyvinyl chloride**, polyethylene, etc., and the adequate examples of the active components include N, N-dicyclohexyl benzothiazyl-2-sulfenamide, 2-methyl **mercaptobenzothiazole**, etc.

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IC ICM A43B013-18

L110 ANSWER 2 OF 7 JAPIO (C) 2003 JPO on STN  
ACCESSION NUMBER: 1998-195339 JAPIO  
TITLE: **VIBRATION-DAMPING** COATING  
MATERIAL  
INVENTOR: OHIRA YASUYUKI; HORI MITSUO  
PATENT ASSIGNEE(S): CCI CORP  
PATENT INFORMATION:

PATENT NO	KIND	DATE	ERA	MAIN IPC
JP 10195339	A	19980728	Heisei	C09D005-00

## APPLICATION INFORMATION

STN FORMAT: JP 1997-73642 19970326  
ORIGINAL: JP09073642 Heisei  
PRIORITY APPLN. INFO.: JP 1996-303295 19961114  
SOURCE: PATENT ABSTRACTS OF JAPAN (CD-ROM), Unexamined  
Applications, Vol. 1998

AN 1998-195339 JAPIO

AB PROBLEM TO BE SOLVED: To obtain a **vibration-damping** coating material which can exhibit **vibration** energy **absorbing** performances fur surpassing those of a conventional **vibration-damping** sheet, being good in the region of service temperature and being excellent in a wider temperature region by adding an active component which can increase the **dipole moment** of a film component to a film component.  
SOLUTION: With respect to the **dipole moment** vs. **vibration** energy **absorbing** performance relationship, the state of arrangement of **dipoles** 12 inside the restriction layer 11 formed from a film-forming component before vibration energy is transferred is stable as shown in Fig. When vibration energy is transferred, the **dipoles** 12 present inside the restriction layer 11 displace and become unstable, and the respective **dipoles** tend to restore the stable state shown in Fig. In view of this fact, a **polyvinyl chloride**, a chlorinated polyethylene or the like which is a polar molecule inherently having large **dipole moment** within the molecule is used as the film-forming component forming the restriction layer, and a high polymer having a glass transition temperature in the region of service temperature is used as the film-forming component.

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IC ICM C09D005-00  
ICS C09D007-12; C09D109-00; C09D111-00; C09D123-28; C09D127-06;  
C09D201-00

L110 ANSWER 3 OF 7 JAPIO (C) 2003 JPO on STN  
ACCESSION NUMBER: 1998-154892 JAPIO  
TITLE: **ELECTROMAGNETIC WAVE ABSORBING**  
MATERIAL  
INVENTOR: OHIRA YASUYUKI; HORI MITSUO

PATENT ASSIGNEE(S): CCI CORP  
PATENT INFORMATION:

PATENT NO	KIND	DATE	ERA	MAIN IPC
JP 10154892	A	19980609	Heisei	H05K009-00

## APPLICATION INFORMATION

STN FORMAT: JP 1996-314725 19961126  
ORIGINAL: JP08314725 Heisei  
PRIORITY APPLN. INFO.: JP 1996-314725 19961126  
SOURCE: PATENT ABSTRACTS OF JAPAN (CD-ROM), Unexamined  
Applications, Vol. 1998

AN 1998-154892 JAPIO

AB PROBLEM TO BE SOLVED: To enhance **electromagnetic** wave **absorbing** performance without sacrifice of strength or machinability by admixing an active component for increasing the **dipole moment** to the basic material of an **electromagnetic** wave **absorbing** material.  
SOLUTION: 100 pts.wt. of a basic material 11 is admixed with 10-200 pts.wt. of an active component for increasing the **moment** of **dipole** 12 in the basic material 11 using a polymer, e.g. **polyvinyl chloride**, chlorinated polyethylene, polypropylene, ethylene-vinyl acetate copolymer, methy polymetacrylate, polystyrene, styrene-butadiene-acrylonitrile copolymer, polyurethane, polyvinyl formal, epoxy, phenol, urea or silicon. This composition enhances the **electromagnetic** wave **absorbing** performance of the **electromagnetic** wave **absorbing** material while ensuring a sufficient strength and workability.

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IC ICM H05K009-00

L110 ANSWER 4 OF 7 JAPIO (C) 2003 JPO on STN

ACCESSION NUMBER: 1998-139933 JAPIO  
TITLE: **VIBRATION-PROOFING MATERIAL**  
INVENTOR: OHIRA YASUYUKI; HORI MITSUO  
PATENT ASSIGNEE(S): CCI CORP  
PATENT INFORMATION:

PATENT NO	KIND	DATE	ERA	MAIN IPC
JP 10139933	A	19980526	Heisei	C08L007-00

## APPLICATION INFORMATION

STN FORMAT: JP 1996-295297 19961107  
ORIGINAL: JP08295297 Heisei  
PRIORITY APPLN. INFO.: JP 1996-295297 19961107  
SOURCE: PATENT ABSTRACTS OF JAPAN (CD-ROM), Unexamined  
Applications, Vol. 1998

AN 1998-139933 JAPIO

AB PROBLEM TO BE SOLVED: To obtain a high **damping**

**vibration-proofing** material which can isolate or attenuate the vibration propagated from a source of vibration by incorporating a specified active component in the matrix constituting a **vibration-proofing** material.

SOLUTION: In the matrix constituting the **vibration-proofing** material and desirably comprising a polymer having the glass transition point in the range of service temperature (e.g. PVC), an active component which increases the **dipole moment** in the matrix, desirably at least one member selected from among compounds having a mercaptobenzothiazole group (e.g. N,N-dicyclohexylbenzothiazyl-2-sulfenamide), at least one member selected from among compounds containing a **benzotriazole** group [e.g. 2-(2'-hydroxy-5'-methylphenyl)-**benzotriazole**] or at least one member selected among compounds having a **diphenylacrylate** group (e.g. ethyl-2-cyano-3,3-diphenyl acrylate). The mixing ratio is such that 100 pts.wt. matrix is mixed with 10-300 pts.wt. active component.

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IC ICM C08L007-00  
ICS C08K005-3495; C08K005-46; C08L009-02; C08L009-06; C08L023-28;  
C08L027-06; C08L101-00

L110 ANSWER 5 OF 7 JAPIO (C) 2003 JPO on STN  
ACCESSION NUMBER: 1998-138365 JAPIO  
TITLE: LAMINATED DAMPING STEEL MATERIAL OF  
UNCONSTRAINED TYPE  
INVENTOR: OHIRA YASUYUKI; HORI MITSUO  
PATENT ASSIGNEE(S): CCI CORP  
PATENT INFORMATION:

PATENT NO	KIND	DATE	ERA	MAIN IPC
JP 10138365	A	19980526	Heisei	B29D031-00

#### APPLICATION INFORMATION

STN FORMAT: JP 1996-300586 19961112  
ORIGINAL: JP08300586 Heisei  
PRIORITY APPLN. INFO.: JP 1996-300586 19961112  
SOURCE: PATENT ABSTRACTS OF JAPAN (CD-ROM), Unexamined  
Applications, Vol. 1998

AN 1998-138365 JAPIO

AB PROBLEM TO BE SOLVED: To realize a product which is light-weighted, easy to be worked, and has excellent **vibration** energy **absorbing** performance comparing with the laminated damping steel material of constrained type by a method wherein an active constituent increasing the **dipole moment** in parent material is compounded into the parent material constituting the **vibration damping** material.  
SOLUTION: In order to develop most efficiently **absorbing** performance of **vibration** energy in a use temperature range, a high polymer such as **polyvinyl chloride**, polyethylene, etc., which has a glass transition temperature in



the use temperature range is used as a parent material. Then, an active constituent which increases a **dipole moment** in the parent material is that in which the **dipole moment** of that itself, or a constituent wherein though the **dipole moment** of that itself is small, the **dipole moment** of the parent material is increased by blending that. The **dipole moment** of the parent material is increased by blending this active constituent, and energy absorbing performance can be increased by restoring action of the **dipole** when vibration energy is transmitted thereby.

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IC ICM B29D031-00  
 ICS C08K005-10; C08K005-315; C08K005-3475; C08K005-46; C08L009-02;  
 C08L009-06; C08L011-00; C08L023-28; C08L027-06; C08L101-00;  
 F16F015-02  
 ICI B29K009:00, B29K027:06

L110 ANSWER 6 OF 7 JAPIO (C) 2003 JPO on STN  
 ACCESSION NUMBER: 1998-007845 JAPIO  
 TITLE: **VIBRATION-DAMPING MATERIAL**  
 INVENTOR: OHIRA YASUYUKI; HORI MITSUO  
 PATENT ASSIGNEE(S): CCI CORP  
 PATENT INFORMATION:

PATENT NO	KIND	DATE	ERA	MAIN IPC
JP 10007845	A	19980113	Heisei	C08L021-00

#### APPLICATION INFORMATION

STN FORMAT: JP 1996-169162 19960628  
 ORIGINAL: JP08169162 Heisei  
 PRIORITY APPLN. INFO.: JP 1996-169162 19960628  
 SOURCE: PATENT ABSTRACTS OF JAPAN (CD-ROM), Unexamined Applications, Vol. 1998

AN 1998-007845 JAPIO

AB PROBLEM TO BE SOLVED: To obtain a **vibration-damping** material having remarkably increased **dipolar moment** at the working temperature of a matrix, exhibiting excellent **vibration** energy **absorbing** performance and useful for automobile, interior material, building material, etc., by compounding a specific active component to a matrix material having a glass transition point within the working temperature range.  
 SOLUTION: This **vibration-damping** material can be produced by compounding (A) a matrix material having a glass transition point within the working temperature range (e.g. polar polymers such as acrylic **rubber**, acrylonitrile-butadiene **rubber**, styrenebutadiene **rubber**, chloroprene **rubber** and chlorinated polyethylene) with (B) an active component effective for increasing the **dipolar moment** of the component A [e.g. a compound containing

**mercaptobenzothiazyl** group, a compound containing **benzotriazole** group or a compound of the formula (R is one or two groups selected from phenyl, cyclohexyl, cyclopentyl, cycloheptyl and 4-methylcyclohexyl)].

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IC ICM C08L021-00  
ICS C08K005-12; C08K005-44; F16F015-02

L110 ANSWER 7 OF 7 JAPIO (C) 2003 JPO on STN  
ACCESSION NUMBER: 1997-316295 JAPIO  
TITLE: ENERGY CONVERSION COMPOSITION  
INVENTOR: OHIRA YASUYUKI; HORI MITSUO  
PATENT ASSIGNEE(S): CCI CORP  
PATENT INFORMATION:

PATENT NO	KIND	DATE	ERA	MAIN IPC
JP 09316295	A	19971209	Heisei	C08L057-04

#### APPLICATION INFORMATION

STN FORMAT: JP 1996-136583 19960530  
ORIGINAL: JP08136583 Heisei  
PRIORITY APPLN. INFO.: JP 1996-136583 19960530  
SOURCE: PATENT ABSTRACTS OF JAPAN (CD-ROM), Unexamined Applications, Vol. 1997

AN 1997-316295 JAPIO  
AB PROBLEM TO BE SOLVED: To obtain a composition having function to absorb and convert energy, useful for **vibration-damping** materials, sound-**absorbing** materials, **shock-absorbing** materials, etc., by incorporating a matrix with a **mercaptobenzothiazyl** group-bearing active component or the like capable of increasing the **dipole moment** of the matrix.  
SOLUTION: This composition having function to absorb and convert energy is obtained by incorporating a matrix (e.g. styrene-butadiene **rubber**) with a **mercaptobenzothiazyl** group-bearing compound (e.g. N,N-dicyclohexyl **benzothiazyl** -2-sulfenamide), a **benzotriazole** group-bearing compound {e.g. 2-[2'-hydroxy-3'-(3",4",5",6"-tetrahydrophthalimidemethyl)-5'-methylphenyl]- **benzotriazole**} and/or a phthalic ester of the formula (R is phenyl, cyclohexyl, cyclopentyl, etc.) as active component(s) capable of increasing the **dipole moment** of the matrix.  
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IC ICM C08L057-04  
ICS C08K005-12; C08K005-3475; C08K005-37; C08L027-06

=> file wpix

FILE 'WPIX' ENTERED AT 11:11:48 ON 10 OCT 2003  
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FILE LAST UPDATED: 9 OCT 2003 <20031009/UP>  
MOST RECENT DERWENT UPDATE: 200365 <200365/DW>  
DERWENT WORLD PATENTS INDEX SUBSCRIBER FILE, COVERS 1963 TO DATE

=> d l111 1-10 max

L111 ANSWER 1 OF 10 WPIX COPYRIGHT 2003 THOMSON DERWENT on STN

AN 2000-638440 [61] WPIX

DNN N2000-473538 DNC C2000-192082

TI Constrained **vibration damping** material for automobiles etc. has **vibration damping** resin layer containing base resin and active component which increases **dipole moment** in base resin, and two metal plates which hold resin layer.

DC A88 P73

IN MORI, M; OHIRA, Y

PA (SHIS-N) SHISHAI KK

CYC 1

PI WO 2000059719 A1 20001012 (200061)\* JA 15p B32B015-08  
W: JP

JP 2000609256 X 20020716 (200261) B32B015-08

ADT WO 2000059719 A1 WO 1999-JP1777 19990402; JP 2000609256 X WO 1999-JP1777 19990402, JP 2000-609256 19990402

FDT JP 2000609256 X Based on WO 2000059719

PRAI WO 1999-JP1777 19990402

IC ICM B32B015-08

AB WO 200059719 A UPAB: 20001128

NOVELTY - Constrained **vibration damping** material has a **vibration damping** resin layer containing a base resin and an active component which increases the **dipole moment** in the base resin, and 2 metal plates which hold the resin layer from both sides.

USE - The material is used in automobiles, interior materials, building materials, mechanical devices for various applications, precision machines, electrical machines, aeronautic and space machines, domestic electric devices and clocks etc.

ADVANTAGE - The device is effective against vibrations and electromagnetic waves generated from machines and appliances, resulting in improvements of quality, durability and noise reduction of products.

DESCRIPTION OF DRAWING(S) - Figure 1 is a cross-section of the material.

Constrained **Vibration Damping** Material 10

Metal Plates 11, 12

**Vibration Damping** Resin Layer 13

Dwg.1/2

TECH WO 200059719 A1UPTX: 20001128

TECHNOLOGY FOCUS - POLYMERS - Preferred Materials: The base resin is chlorinated polyethylene, **polyvinyl chloride**, polyethylene, polypropylene, ethylene-vinyl acetate copolymer, polymethyl methacrylate, polyvinylidene fluoride, polyisoprene,

polystyrene, styrene-butadiene-acrylonitrile copolymer (ABS resin), styrene-acrylonitrile copolymer (AS resin), polycarbonate, acrylonitrile-butadiene **rubber** (NBR), styrene-butadiene **rubber** (SBR), butadiene **rubber** (BR), natural **rubber** and/or isoprene **rubber**.

The active component is a compound containing a **benzothiazyl** group, a compound containing a **benzotriazole** group, a compound containing a **diphenyl acrylate** group and/or a compound containing a benzophenone group. The metal plates are copper, aluminum, stainless steel and/or steel.

FS CPI GMPI  
 FA AB; GI  
 MC CPI: A08-M09A; A09-A03; A09-A04; A12-E01A; A12-H09  
 PLE UPA 20001128

L111 ANSWER 2 OF 10 WPIX COPYRIGHT 2003 THOMSON DERWENT on STN

AN 2000-505689 [45] WPIX

DNN N2000-373987 DNC C2000-151696

TI Precision device which moves or rotates recording medium such as magnetic tape or disc has vibration countermeasure material having vibration energy converting compound in which component is **dipole** coupled with active component.

DC A85 E14 Q63 T03 W04

IN HORI, M; OHIRA, Y

PA (SHIS-N) SHISHAI KK

CYC 1

PI WO 2000041179 A1 20000713 (200045)\* JA 34p G11B033-08  
 W: JP

JP 2000592832 X 20020508 (200245) G11B033-08

ADT WO 2000041179 A1 WO 1998-JP6012 19981228; JP 2000592832 X WO 1998-JP6012 19981228, JP 2000-592832 19981228

FDT JP 2000592832 X Based on WO 2000041179

PRAI WO 1998-JP6012 19981228

IC ICM G11B033-08

ICS C08J003-12; C08J003-20; C08J005-00; C08K005-00; C08K005-3467; C08K005-36; C08L101-00; F16F015-02; F16F015-08; G11B033-02

AB WO 200041179 A UPAB: 20000918

NOVELTY - A precision device moves or rotates a recording medium such as a magnetic tape or disc. The device has a vibration countermeasure material having a vibration energy converting compound inside the device in which the component comprising the material is **dipole** coupled with an active component for increasing the **dipole moment** in the material.

USE - The precision device is an audio recording/reproducing device using a magnetic medium, e.g. a tape recorder, a MD recorder or a digital audio recorder, or a video recording/reproducing device, e.g. a video recorder or camcorder.

ADVANTAGE - The noise and chattering due to vibration generated inside the device are efficiently absorbed and eliminated.

DESCRIPTION OF DRAWING(S) - Figure 4 is a drawing showing the vibration controlling material in a video camera.

Dwg.4/8

TECH WO 200041179 A1UPTX: 20000918

TECHNOLOGY FOCUS - POLYMERS - Preferred Materials: The component comprising the material is **polyvinyl chloride** (**PVC**), polyethylene (PE), chlorinated polyethylene (CPE), polypropylene (PP), ethylene-vinyl acetate copolymer, polymethyl methacrylate, polyvinylidene fluoride, polyisoprene, polystyrene (PS), styrene-butadiene-acrylonitrile copolymer (ABS), styrene-acrylonitrile copolymer (AS), acrylonitrile-butadiene **rubber** (NBR), acryl **rubber** (ACR), styrene-butadiene **rubber** (SBR), butadiene **rubber** (SR), natural **rubber** (NR), isoprene **rubber** (IR) and/or chloroprene **rubber** (CR).

TECHNOLOGY FOCUS - ORGANIC CHEMISTRY - Preferred Materials: The active component is a compound having a **benzothiazyl** group, a compound having a **diphenyl-acrylate** group, a compound having a benzophenone group and/or a phthalate of formula (I):

R = phenyl, cyclohexyl, cyclopentyl, cycloheptyl and/or 4-methylcyclohexyl group.

The vibration countermeasure material is a vibration controlling and/or **vibration preventing** material.

KW [1] 65423-0-0-0 CL USE; 62350-0-0-0 CL USE; 213042-0-0-0 CL USE; 133592-0-0-0 CL USE; 8634-0-0-0 CL USE; 206699-0-0-0 CL USE; 61597-0-0-0 CL USE; 6801-0-0-0 CL USE; 23097-0-0-0 CL USE; 131897-0-0-0 CL USE; 129653-0-0-0 CL USE; 130254-0-0-0 CL USE; 307195-0-0-0 CL USE; 307196-0-0-0 CL USE; 307197-0-0-0 CL USE; 206700-0-0-0 CL USE; 93716-0-0-0 CL USE; 89492-0-0-0 CL USE; 129608-0-0-0 CL USE; 104494-0-0-0 CL USE; 104401-0-0-0 CL USE; 199344-0-0-0 CL USE; 104471-0-0-0 CL USE; 104432-0-0-0 CL USE; 125155-0-0-0 CL USE; 112490-0-0-0 CL USE; 104481-0-0-0 CL USE; 199513-0-0-0 CL USE; 199407-0-0-0 CL USE; 135413-0-0-0 CL USE; 199414-0-0-0 CL USE; 94633-0-0-0 CL USE; 133507-0-0-0 CL USE; 199331-0-0-0 CL USE; 199514-0-0-0 CL USE; 0021-67701 CL USE

FS CPI EPI GMPI

FA AB; GI; DCN

MC CPI: A08-M10; A12-E08A; E06-D08; E06-F01; E10-F02A2; E10-G02F1  
EPI: T03-L; W04-L

DRN 0618-U; 1388-U

PLE UPA 20000918

L111 ANSWER 3 OF 10 WPIX COPYRIGHT 2003 THOMSON DERWENT on STN

AN 2000-498773 [44] WPIX

CR 2000-452013 [37]; 2000-465303 [37]

DNN N2000-369750 DNC C2000-149560

TI Compounds for energy conversion with function to absorb and e.g. impact and sound comprises component consisting of material with energy conversion function and active component for increasing **dipole moment**.

DC A85 F01 G02 L03 U11 V04 V06 W02

IN HORI, M; OHIRA, Y  
PA (SHIS-N) SHISHAI KK

CYC 1

PI WO 2000036023 A1 20000622 (200044)\* JA 56p C08L101-00  
W: JP

JP 2000588277 X 20020402 (200227) C08L101-00

ADT WO 2000036023 A1 WO 1999-JP907 19990225; JP 2000588277 X WO  
1999-JP907 19990225, JP 2000-588277 19990225

FDT JP 2000588277 X Based on WO 2000036023

PRAI WO 1998-JP5633 19981211

IC ICM C08L101-00

ICS B29D031-00; C07C069-80; C07C255-41; C07D277-80; C07D403-10;  
C08J009-02; C08K005-00; C09D005-00; F16F015-02; G10K011-162;  
H01L041-193; H01M014-00; H05K009-00

AB WO 200036023 A UPAB: 20020429

NOVELTY - An energy-converting compound comprises a component  
constituting a material with energy conversion function and an  
active component for increasing the **dipole moment**  
of such material which are bonded by **dipole** interaction.  
It can provide various effects of **damping**, sound-  
**absorbing**, **impact-absorbing**,  
**electromagnetic wave-absorbing** and  
**vibration-proofing**.

USE - The compounds are applicable in **damping**, sound-  
**absorbing**, **impact-absorbing**,  
**electromagnetic wave-absorbing**, **vibration**  
**-proofing** and **piezoelectric** materials viscous  
liquids, polar liquid and cell materials including paints, foamed  
materials and film (all claimed), e.g. in shoe sole, head gears,  
baseball bats, tennis rackets, shoulder pads and audio equipment.

ADVANTAGE - Such compound can provide various effects of  
**damping**, sound-**absorbing**, **impact-**  
**absorbing**, **electromagnetic wave-absorbing**  
and **vibration-proofing**.

DESCRIPTION OF DRAWING(S) - **Dipole** state in a  
material when energy applied.

Interior of material 11

**dipole** 12

Dwg.1/21

TECH WO 200036023 A1UPTX: 20000913

TECHNOLOGY FOCUS - POLYMERS - Preferred material: The material with  
energy conversion function can be 1 or more polymers selected from  
**polyvinyl chloride** (PVC), polyethylene  
chloride (CPE), acrylonitrile-modified polyethylene (ANPE),  
polyethylene (PE), polypropylene (PP), ethylene-vinyl acetate  
copolymer, polymethyl methacrylate, polyvinylidene fluoride,  
polyisoprene, polystyrene (PS), styrene-butadiene-acrylonitrile  
copolymer (ABS), styrene-acrylonitrile copolymer (AS),  
acrylonitrile-butadiene **rubber** (NBR), acrylic  
**rubber** (ACR), styrene-butadiene **rubber** (SBR),  
butadiene **rubber** (BR), natural **rubber** (NR),  
isoprene **rubber** (IR), chloroprene **rubber** (CR),

polyester (PET), polyurethane, polyamide, polyvinylidene **chloride**, polyacrylonitrile, **polyvinyl** alcohol (PVA) and cellulose.

TECHNOLOGY FOCUS - ORGANIC CHEMISTRY - Preferred Energy Conversion Compounds: The material in the compound that has energy conversion function can also be glycols, or water. The active component is chosen from 1 or more compounds with **benzothiazyl** group, or **benzotriazole** group, or **diphenyl acrylate** group, or benzophenone group, or phthalate having a structure of formula (I).

R = independently phenyl, cyclohexyl, cyclopentyl, cycloheptyl, 4-methylcyclohexyl.

Preferred Products: The damping material is particularly a non-restrained damping material, or a damping paint. The sound-absorbing material can be a sound-absorbing film, foamed noise absorber, or sound-**absorbing** fiber. The **electromagnetic** wave-**absorbing** material can be an **electromagnetic** wave-**absorbing** paint.

ABEX WO 200036023 A1UPTX: 20000913

EXAMPLE - A damping material was produced from 100 pts.wt. CPE Elaslène 352NA (RTM: chlorinated polyethylene rubber) and 30 pts.wt. DCHBSA (N,N-dicyclohexylbenzothiazyl-2-sulfenamide) by kneading at 160degreesC to form a sheet (1 mm in thickness). Dipole coupling was observed, and tan delta was satisfactory.

FS CPI EPI

FA AB; GI

MC CPI: A09-A01; A09-A02; A09-A03; A10-E; A12-E01; A12-H00H; A12-L03; F01-D; F03-C; G02-A02; G02-A05; L03-D01; L03-G

EPI: U11-A02; V04-S09; V04-U01; V06-L01A; W02-B03D

PLE UPA 20000918

L111 ANSWER 4 OF 10 WPIX COPYRIGHT 2003 THOMSON DERWENT on STN

AN 2000-465303 [40] WPIX

CR 2000-452013 [37]; 2000-498773 [37]

DNN N2000-347344 DNC C2000-140009

TI Energy-converting compounds with function of absorbing and converting various energies e.g. mechanical, thermal and optical, for use in damping, noise-**absorbing** and **vibration -proofing** materials.

DC A85 F01 G02 L03 U11 V04 V06 X16

IN HORI, M; OHIRA, Y

PA (SHIS-N) SHISHAI KK

CYC 1

PI WO 2000036022 A1 20000622 (200040)\* JA 66p C08L101-00  
W: JP

JP 2000588276 X 20020402 (200227) C08L101-00

ADT WO 2000036022 A1 WO 1999-JP3491 19990628; JP 2000588276 X WO 1999-JP3491 19990628, JP 2000-588276 19990628.

FDT JP 2000588276 X Based on WO 2000036022

PRAI WO 1999-JP907 19990225; WO 1998-JP5633 19981211

IC ICM C08L101-00  
 ICS B29D031-00; C07C069-80; C07C255-41; C07D277-80; C07D403-10;  
 C08J009-02; C08K005-00; C09D005-00; F16F015-02; G10K011-162;  
 H01L041-193; H01M014-00; H05K009-00

AB WO 200036022 A UPAB: 20020429

NOVELTY - Energy-converting compound comprises a component constituting a material with energy conversion function which is **dipole-coupled** to an active component to increase the **dipole moment** of such material. It can provide various effects of **damping**, **sound-absorbing**, **impact-absorbing**, **electromagnetic wave-absorbing** and **vibration-proofing**.

USE - The compounds are applicable in **damping**, **sound-absorbing**, **impact-absorbing**, **electromagnetic wave-absorbing**, **vibration-proofing** and **piezoelectric** materials viscous liquids, polar liquid and cell materials including paints, foamed materials and film (all claimed), e.g. in washing machines, refrigerators, shoe sole, head gears, baseball bats, tennis rackets, shoulder pads, video cameras and audio equipment

ADVANTAGE - Such compound can provide various effects of **damping**, **sound-absorbing**, **impact-absorbing**, **electromagnetic wave-absorbing** and **vibration-proofing**.

DESCRIPTION OF DRAWING(S) - **Dipole** state in a material when energy applied.

Interior of material 11

**Dipole 12**

Dwg.1/22

TECH WO 200036022 A1UPTX: 20000823

TECHNOLOGY FOCUS - POLYMERS - Preferred Material: The material with energy conversion function can be 1 or more polymeric materials selected from **polyvinyl chloride (PVC)**, **polyethylene (PE)**, **polyethylene chloride (CPE)**, **acrylonitrile-modified polyethylene (ANPE)**, **polypropylene (PP)**, **polyamide (PA)**, **polymethyl methacrylate (PMMA)**, **ethylene-vinyl acetate copolymer**, **polyvinylidene fluoride**, **polyisoprene**, **polystyrene (PS)**, **styrene-butadiene-acrylonitrile copolymer (ABS)**, **styrene-acrylonitrile copolymer (AS)**, **polyester (PET)**, **polyurethane**, **polyvinylidene chloride**, **polyacrylonitrile**, **polyvinyl alcohol (PVA)**, **cellulose** and **polycarbonate**; or **polymeric rubbers** of natural **rubber (NR)**, **acrylic rubber (ACR)**, **styrene-butadiene rubber (SBR)**, **butadiene rubber (BR)**, **butyl rubber**, **isobutylene-isoprene rubber (IIR)**, or **halogenated rubbers** of **butyl chloride rubber** and **butyl bromide rubber**, **ethylene-propylene-diene copolymer rubber (EPDM)**, **acrylic rubber (ACR)**, **acrylonitrile-butadiene rubber (NBR)**, **isoprene rubber (IR)**, **chloroprene rubber (CR)**; or their mixture.

TECHNOLOGY FOCUS - ORGANIC CHEMISTRY - Preferred Energy Conversion



Compounds: The material in the compound the has energy conversion function can also be glycols, or water. The active component is chosen from 1 or more compounds with **benzothiazyl** group, or **benzotriazole** group, or **diphenyl**

**acrylate** group, or benzophenone group, or phthalate having a structure of formula (I).

R = independently phenyl, cyclohexyl, cyclopentyl, cycloheptyl, 4-methylcyclohexyl.

Preferred Products: The damping material is particularly a non-restrained damping material, or a damping paint. The sound-absorbing material can be a sound-absorbing film, foamed noise absorber, or sound-**absorbing** fiber. The **electromagnetic wave-absorbing** material can be an **electromagnetic wave-absorbing** paint.

ABEX WO 200036022 A1UPTX: 20000823

EXAMPLE - A damping material was produced from 100 pts.wt. CPE Elaslene 352NA (RTM) and 30 pts.wt. DCHBSA (N,N-dicyclohexylbenzothiazyl-2-sulfenamide) by kneading at 160 degreesC to form a sheet (1 mm in thickness). Dipole coupling was observed, and tan delta was satisfactory.

FS CPI EPI

FA AB; GI

MC CPI: A08-M10; A12-B01; F04-E06; F04-G; G02-A02B; G02-A03; G02-A05;  
L03-D01; L03-G

EPI: U11-A02; V04-U01; V06-L01A; X16-E01

PLE UPA 20000913

L111 ANSWER 5 OF 10 WPIX COPYRIGHT 2003 THOMSON DERWENT on STN

AN 2000-452013 [39] WPIX

CR 2000-465303 [37]; 2000-498773 [37]

DNN N2000-336560 DNC C2000-137689

TI Energy conversion compounds used in **impact** and sound **absorbing** comprises component constituting material with energy conversion function and active component for increasing quantity of **dipole moment**.

DC A85 F01 G02 L03 V04 V06 X16

IN HORI, M; OHIRA, Y

PA (SHIS-N) SHISHAI KK

CYC 1

PI WO 2000036044 A1 20000622 (200039)\* JA 54p C09K003-00  
W: JP

JP 2000588276 X 20020402 (200227) C08L101-00

JP 2000588297 X 20020402 (200227) C09K003-00

ADT WO 2000036044 A1 WO 1998-JP5633 19981211; JP 2000588276 X WO  
1999-JP3491 19990628, JP 2000-588276 19990628; JP 2000588297 X WO  
1998-JP5633 19981211, JP 2000-588297 19981211

FDT JP 2000588276 X Based on WO 2000036022; JP 2000588297 X Based on WO  
2000036044

PRAI WO 1998-JP5633 19981211; WO 1999-JP907 19990225

IC ICM C08L101-00; C09K003-00

ICS B29D031-00; C07C069-80; C07C255-41; C07D277-80; C07D403-10;

C08J005-18; C08J009-00; C08J009-02; C08K005-00; C08L027-06;  
C09D005-00; C09D005-32; D01F006-48; E04B001-74; F16F001-36;  
F16F007-00; F16F015-02; F16F015-08; G10K011-162; H01L041-193;  
H01M004-60; H01M014-00; H05K009-00

AB WO 200036044 A UPAB: 20020429

NOVELTY - An energy-converting compound comprises a component constituting a material with energy conversion function and an active component for increasing the quantity of **dipole moment** in a material that are coupled with each other by **dipole coupling**.

DETAILED DESCRIPTION - An energy-converting compound comprises a component constituting a material with energy conversion function and an active component for increasing the quantity of **dipole moment** in a material that are coupled with each other by **dipole coupling**.

USE - The compounds are applicable in **damping**, **sound-absorbing**, **impact-absorbing**, **electromagnetic wave-absorbing**, **vibration-proofing** and **piezoelectric** materials viscous liquids, polar liquid and cell materials including paints, foamed materials and film (all claimed), e.g. in shoe sole, head gears, baseball bats and tennis rackets.

ADVANTAGE - Such compound can provide various effects of **damping**, **sound-absorbing**, **impact-absorbing**, **electromagnetic wave-absorbing** and **vibration-proofing**.

DESCRIPTION OF DRAWING(S) - **Dipole** state in a material.

Interior of material 11

**dipole** 12

Dwg.3/21

TECH WO 200036044 A1UPTX: 20000818

TECHNOLOGY FOCUS - POLYMERS - The material with energy conversion function can be 1 or more polymers selected from **polyvinyl chloride** (PVC), polyethylene (PE), polyethylene chloride (CPE), polypropylene (PP), ethylene-vinyl acetate copolymer, polymethyl methacrylate, polyvinylidene fluoride, polyisoprene, polystyrene (PS), styrene-butadiene-acrylonitrile copolymer (ABS), styrene-acrylonitrile copolymer (AS), acrylonitrile-butadiene **rubber** (NBR), acrylic **rubber** (ACR), styrene-butadiene **rubber** (SBR), butadiene **rubber** (BR), natural **rubber** (NR), isoprene **rubber** (IR), chloroprene **rubber** (CR), polyester (PET), polyurethane, polyamide, polyvinylidene **chloride**, polyacrylonitrile, **polyvinyl alcohol** (PVA) and cellulose.

TECHNOLOGY FOCUS - ORGANIC CHEMISTRY - Preferred Energy Conversion Compounds: The material in the compound that has energy conversion function can also be glycols, or water. The active component is chosen from 1 or more compounds with **benzothiazyl** group, or **benzotriazole** group, or **diphenyl**

**acrylate** group, or benzophenone group, or phthalate having a structure of formula (I).

R = independently phenyl, cyclohexyl, cyclopentyl, cycloheptyl, 4-methyl cyclohexyl.

Preferred Products: The damping material is particularly a non-restrained damping material, or a damping paint. The sound-absorbing material can be a sound-absorbing film, foamed noise absorber, or sound-**absorbing** fiber. The

**electromagnetic** wave-**absorbing** material can be an

**electromagnetic** wave-**absorbing** paint.

ABEX WO 200036044 A1UPTX: 20000818

EXAMPLE - A damping material was produced from 100 pts.wt. CPE Elaslene 352NA (RTM) and 30 pts.wt. DCHBSA (N,N-dicyclohexylbenzothiazyl-2-sulfenamide) by kneading at 160degreesC to form a sheet (1 mm in thickness). Dipole coupling was observed, and tandelta was satisfactory.

FS CPI EPI

FA AB; GI

MC CPI: A09-A01A; A09-A02; A09-A03; A10-E; A12-E01; A12-H00H; A12-L03; F01-D; F03-C; G02-A02; G02-A05; L03-D01

EPI: V04-U01; V06-L01A; X16-E01

PLE UPA 20000913

L111 ANSWER 6 OF 10 WPIX COPYRIGHT 2003 THOMSON DERWENT on STN

AN 2000-205603 [18] WPIX

CR 2000-195563 [17]

DNC C2000-063399

TI Pellets for vibration-control resin moldings can **absorb** and **dampen vibration** propagation through or occurring from machinery, appliances and structures.

DC A88

IN HORI, M; OHIRA, Y

PA (SHIS-N) SHISHAI KK

CYC 1

PI WO 2000007789 A1 20000217 (200018)\* JA 18p B29B009-12  
W: JP

JP 2000563448 X 20011009 (200174) B29B009-12

ADT WO 2000007789 A1 WO 1998-JP3543 19980807; JP 2000563448 X WO 1998-JP3543 19980807, JP 2000-563448 19980807

FDT JP 2000563448 X Based on WO 2000007789

PRAI WO 1998-JP3543 19980807

IC ICM B29B009-12

ICS C08K003-00; C08K005-00; C08K005-3492; C08K005-36; C08L101-00

AB WO 200007789 A UPAB: 20000412

NOVELTY - A pellet for vibration-control moldings is obtained by blending a base resin with an active component that can increase its **dipole moment** and an inorganic filler, which can **absorb** and **dampen vibration** propagation through or occurring from machinery, appliances and structures.

DETAILED DESCRIPTION - A pellet for vibration-control moldings is obtained by blending a base resin with an active component that

can increase its **dipole moment** and an inorganic filler.

USE - The pellets are used in vibration-control resin moldings for protecting structural materials of cars, domestic appliances, electrical equipment, precision instruments, communication equipment, office automation equipment, building machinery, construction structures, and other machinery, appliances and structures.

ADVANTAGE - With the moldings, its possible to efficiently cut off noise and vibration, making the environment e.g. in the car or office quieter and more comfortable, and avoiding harm done to the structural interior by diffusing the vibration and noise outwards.

DESCRIPTION OF DRAWING(S) - The diagram shows the state of the **dipole** in the base resin when blended with the active component.

Interior of base resin 11

**Dipole 12**

Dwg.3/4

TECH WO 200007789 A1UPTX: 20000412

TECHNOLOGY FOCUS - INORGANIC CHEMISTRY - Preferred Composition: The amount the inorganic filler applied is 10-100 pts.wt., with respect to 100 pts.wt. the base resin, which can be mica flake and magnesium carbonate.

TECHNOLOGY FOCUS - POLYMERS - Preferred Composition: The base resin can be 1 or more selected from **polyvinyl chloride**, polyethylene, polyethylene chloride (sic), polypropylene, ethylene-vinyl acetate copolymer, polymethylmethacrylate, polyvinylidene fluoride, polyisoprene, polystyrene, styrene-butadiene-acrylonitrile copolymer (ABS resin), styrene-acrylonitrile copolymer (AS resin), acrylonitrile-butadiene **rubber** (NBR), styrene-butadiene **rubber** (SBR), butadiene **rubber** (BR), natural **rubber** (NB) and isoprene **rubber** (IR), or their mixture.

TECHNOLOGY FOCUS - ORGANIC CHEMISTRY - Preferred Composition: Amount of the active component used is 10-200 pts.wt., with respect to 100 pts.wt. The base resin which can be 1 or more compounds containing **benzothiazyl** group, or **benzotriazole** group, or **diphenylacrylate** group, or benzophenone group.

ABEX WO 200007789 A1UPTX: 20000412

EXAMPLE - A mixture of 32 pts.wt. ABS, 28 pts.wt.

N-cyclohexylbenzothiazyl-2-sulfenamide (CBS) and 40 pts.wt. mica was pelletized to give 3 mm long pellets. A sheet was molded with the pellets for evaluation, including loss elastic modulus and dynamic viscosity.

FS CPI

FA AB; GI

MC CPI: A08-M09B; A08-M10; A08-R01; A09-A05; A12-H00H

PLE UPA 20000412

L111 ANSWER 7 OF 10 WPIX COPYRIGHT 2003 THOMSON DERWENT on STN  
 AN 2000-073051 [06] WPIX  
 DNN N2000-057088 DNC C2000-021080  
 TI Damping self-adhesive for **absorbing** and **damping vibrations** propagated to machines etc..  
 DC A81 G03 Q63  
 IN HORI, M; OHIRA, Y  
 PA (SHIS-N) SHISHAI KK  
 CYC 1  
 PI WO 9964535 A1 19991216 (200006)\* JA 22p C09J009-00 <--  
 W: JP  
 JP 2000553527 X 20021119 (200281) C09J009-00  
 ADT WO 9964535 A1 WO 1998-JP2518 19980605; JP 2000553527 X WO 1998-JP2518 19980605, JP 2000-553527 19980605  
 FDT JP 2000553527 X Based on WO 9964535  
 PRAI WO 1998-JP2518 19980605  
 IC ICM C09J009-00  
 ICS F16F015-00  
 AB WO 9964535 A UPAB: 20000203  
 NOVELTY - A damping self-adhesive comprises a polymer and an active component for **enhancing the dipole moment** of the polymer and is capable of **absorbing** and sampling **vibrations** propagating to machines, etc.  
 USE - The damping self-adhesive is applied to automobiles, home electric appliances, precision equipment, construction machines and structures to absorb and **damp** on **vibrations**.  
 ADVANTAGE - The adhesive is capable of **absorbing** and **damping vibrations** propagated to machines, equipment, structures, etc.  
 Dwg.0/7  
 TECH WO 9964535 A1 UPTX: 20000203  
 TECHNOLOGY FOCUS - POLYMERS - The active component is at least one compound selected from compounds containing **benzotriazolyl** groups, **benzotriazole** groups, **diphenylacrylate** groups or benzophenone groups. The content of the active component is 5 approximately 50 pts wt per 100 pts wt of the polymer.  
 ABEX WO 9964535 A1 UPTX: 20000203  
 EXAMPLE - A damping self-adhesive comprising 81 wt% of BPS5375 (RTM), 10 wt% of DCHBSA (RTM) and 9 wt% of BHS8515 (RTM) was applied to a 1 mm thick vinyl chloride sheet. The adhesive had excellent vibration absorption and damping effects.  
 FS CPI GMPI  
 FA AB  
 MC CPI: A08-M09B; A09-A05; A12-H09; G03-B02  
 PLE UPA 20000203  
 [1.1] 018; P0000  
 [1.2] 018; ND01; K9483-R; K9676-R; K9416; Q9999 Q6644-R; Q9999 Q7954 Q7885; B9999 B4024 B3963 B3930 B3838 B3747; B9999 B4762 B4740; Q9999 Q9234 Q9212; Q9999 Q9289 Q9212; Q9999 Q7749 Q7681; Q9999 Q7023 Q6995; Q9999 Q7330-R  
 [1.3] 018; D01 D24 D22 D45 F19 N- 5A; A999 A748; A999 A771; K9734

[1.4] 018; D01 D26 D11 D10 D19 D18 D76 D51-R D63 F41-R; A999  
A748; A999 A771; K9734

[1.5] 018; D01 D19 D18 D76 F23; A999 A748; A999 A771; K9734

L111 ANSWER 8 OF 10 WPIX COPYRIGHT 2003 THOMSON DERWENT on STN  
AN 1998-008487 [01] WPIX  
DNN N1998-006719 DNC C1998-002953  
TI Energy conversion composition for damping material etc. - comprises  
base material e.g. polymers and active component that can increase  
**dipole moment** such as di-benzo-thiazolyl-sulphite.

DC A60 A82 A83 A85 A88 E13 E14 F01 G02 G04 L03 P22 P73 P81 P86 Q17 Q41  
Q43 Q63 U11 U14 V04 V06 V07 W02  
IN HORI, M; OHIRA, Y; HORIKAWA, M  
PA (SHIS-N) SHISHAI KK; (CCIC-N) CCI KK; (CCIC-N) CCI CO LTD; (HORI-I)  
HORI M; (OHIR-I) OHIRA Y

CYC 33  
PI WO 9742844 A1 19971120 (199801)\* JA 226p A43B013-38 <--  
RW: AT BE CH DE DK ES FI FR GB GR IE IT LU MC NL PT SE  
W: AU BR CA CN HU IL JP KR MX NO NZ RU SG TR US  
JP 09302139 A 19971125 (199806) 6p C08K005-378 <--  
JP 09316295 A 19971209 (199808) 8p C08L057-04 <--  
JP 09330086 A 19971222 (199810) 7p G10K011-162 <--  
JP 10007845 A 19980113 (199812) 6p C08L021-00 <--  
AU 9720447 A 19971205 (199814) A43B013-38 <--  
JP 10077417 A 19980324 (199822) 8p C08L101-00 <--  
JP 10138365 A 19980526 (199831) 7p B29D031-00 <--  
JP 10139933 A 19980526 (199831) 8p C08L007-00 <--  
JP 10143164 A 19980529 (199832) 8p G10K011-162 <--  
JP 10149171 A 19980602 (199832) 7p G10K011-162 <--  
JP 10154892 A 19980609 (199833) 7p H05K009-00 <--  
JP 10161663 A 19980619 (199835) 9p G10K011-162 <--  
JP 10190280 A 19980721 (199839) 7p H05K009-00 <--  
JP 10195339 A 19980728 (199840) 11p C09D005-00 <--  
JP 10203795 A 19980804 (199841) 9p B66F009-12 <--  
JP 10215907 A 19980818 (199843) 8p A43B013-18 <--  
JP 10231430 A 19980902 (199845) 7p C08L101-00 <--  
JP 10244020 A 19980914 (199847) 8p A63B049-08 <--  
NO 9803783 A 19980819 (199848) A43B000-00 <--  
EP 897675 A1 19990224 (199912) EN A43B013-38 <--  
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CN 1217635 A 19990526 (199939) A43B013-38 <--  
BR 9708298 A 19990803 (199952) A43B013-38 <--  
HU 9902597 A2 19991129 (200003) A43B013-38 <--  
KR 99082345 A 19991125 (200055) A43B013-38 <--  
MX 9805513 A1 19990601 (200058) A43B013-38 <--  
NZ 333119 A 20000929 (200060) E04B001-82  
AU 732307 B 20010412 (200128) A43B013-38  
AU 2001054333 A 20011018 (200174)# C08K005-315  
NO 311527 B1 20011203 (200203) C08L101-00  
US 2002031626 A1 20020314 (200222) B65D001-00  
US 2002037381 A1 20020328 (200225) B32B001-08

RU 2185765 C2 20020727 (200262) A43B013-38  
 JP 3318593 B2 20020826 (200263) 72p C08L101-00  
 US 2002160131 A1 20021031 (200274) B32B001-02  
 JP 2002285013 A 20021003 (200280) 6p C08L101-00  
 KR 367888 B 20030220 (200353) C08K005-378  
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 19960510; JP 09316295 A JP 1996-136583 19960530; JP 09330086 A JP  
 1996-150592 19960612; JP 10007845 A JP 1996-169162 19960628; AU  
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 19960903; JP 10138365 A JP 1996-300586 19961112; JP 10139933 A JP  
 1996-295297 19961107; JP 10143164 A JP 1996-295076 19961107; JP  
 10149171 A JP 1996-308526 19961119; JP 10154892 A JP 1996-314725  
 19961126; JP 10161663 A JP 1996-323120 19961203; JP 10190280 A JP  
 1996-350649 19961227; JP 10195339 A JP 1997-73642 19970326; JP  
 10203795 A JP 1997-12842 19970127; JP 10215907 A JP 1997-22846  
 19970205; JP 10231430 A JP 1997-36159 19970220; JP 10244020 A JP  
 1997-52921 19970307; NO 9803783 A WO 1997-JP1124 19970328, NO  
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 1997-JP1124 19970328; JP 09540713 X JP 1997-540713 19970328, WO  
 1997-JP1124 19970328; CN 1217635 A CN 1997-194392 19970328; BR  
 9708298 A BR 1997-8298 19970328, WO 1997-JP1124 19970328; HU 9902597  
 A2 WO 1997-JP1124 19970328, HU 1999-2597 19970328; KR 99082345 A WO  
 1997-JP1124 19970328, KR 1998-706075 19980806; MX 9805513 A1 MX  
 1998-5513 19980708; NZ 333119 A NZ 1997-333119 19970328, WO  
 1997-JP1124 19970328; AU 732307 B AU 1997-20447 19970328; AU  
 2001054333 A Div ex AU 1997-20447 19970328, AU 2001-54333 20010712;  
 NO 311527 B1 WO 1997-JP1124 19970328, NO 1998-3783 19980819; US  
 2002031626 A1 Div ex US 1999-91563 19990322, US 2001-924826  
 20010808; US 2002037381 A1 Div ex US 1999-91563 19990322, US  
 2001-924913 20010808; RU 2185765 C2 WO 1997-JP1124 19970328, RU  
 1998-113951 19970328; JP 3318593 B2 JP 1997-540713 19970328, WO  
 1997-JP1124 19970328; US 2002160131 A1 WO 1997-JP1124 19970328, US  
 1999-91563 19990322; JP 2002285013 A Div ex JP 1997-540713 19970328,  
 JP 2002-30763 19970328; KR 367888 B WO 1997-JP1124 19970328, KR  
 1998-706075 19980806  
 FDT AU 9720447 A Based on WO 9742844; EP 897675 A1 Based on WO 9742844;  
 JP 09540713 X Based on WO 9742844; BR 9708298 A Based on WO 9742844;  
 HU 9902597 A2 Based on WO 9742844; KR 99082345 A Based on WO  
 9742844; NZ 333119 A Based on WO 9742844; AU 732307 B Previous Publ.  
 AU 9720447, Based on WO 9742844; AU 2001054333 A Div ex AU 732307;  
 NO 311527 B1 Previous Publ. NO 9803783; RU 2185765 C2 Based on WO  
 9742844; JP 3318593 B2 Based on WO 9742844; KR 367888 B Previous  
 Publ. KR 99082345, Based on WO 9742844  
 PRAI JP 1997-52921 19970307; JP 1996-116269 19960510  
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 19960612; JP 1996-169162 19960628; JP  
 1996-232810 19960903; JP 1996-295076 19961107;  
 JP 1996-295297 19961107; JP 1996-300586 19961112  
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 19961119; JP 1996-314725 19961126; JP  
 1996-323120 19961203; JP 1996-350649 19961227;  
 JP 1997-12842 19970127; JP 1997-22846 19970205

; JP 1997-36159 19970220; AU 2001-54333 20010712

IC ICM A43B000-00; A43B013-18; A43B013-38; A63B049-08; B29D031-00;  
 B32B001-02; B32B001-08; B65D001-00; B66F009-12; C08K005-315;  
 C08K005-378; C08L007-00; C08L021-00; C08L057-04; C08L101-00;  
 C09D005-00; E04B001-82; G10K011-162; H05K009-00

ICS A63B053-14; A63B059-06; B32B005-18; B32B015-18; B60R013-08;  
 C08J009-02; C08K005-00; C08K005-10; C08K005-12; C08K005-3467;  
 C08K005-3475; C08K005-3495; C08K005-37; C08K005-44; C08K005-46;  
 C08K005-47; C08L009-02; C08L009-06; C08L011-00; C08L013-00;  
 C08L023-28; C08L027-06; C09D007-12; C09D109-00; C09D111-00;  
 C09D123-28; C09D127-06; C09D201-00; C09J007-02; C09K003-00;  
 D01F006-00; E01F008-00; E01F008-02; F16F007-00; F16F015-02;  
 G02F001-35; G10K011-16; H01L041-09; H01L041-193; H01Q017-00;  
 H03H009-17; H03H009-25; H05B006-76

ICI B29K009:00, B29K027:06

AB WO 9742844 A UPAB: 19980410

An energy conversion composition has a base material that contains an active component which can increase the level of **dipole moment** in the base material.

The base material is at least 2 polymers selected from **polyvinyl chloride**, polyethylene, chlorinated polyethylene, polypropylene, ethylene-vinyl acetate copolymer, poly(methyl methacrylate), polyvinylidene fluoride, polyisoprene, polystyrene, styrene-butadiene-acrylonitrile copolymer, styrene-acrylonitrile copolymer, polyester, polyurethane, polyamide, polyvinylidene **chloride**, polyacrylonitrile, **polyvinyl alcohol**, cellulose, acrylonitrile-butadiene **rubber** (NBR), styrene-butadiene **rubber** (SBR), butadiene **rubber** (BR), natural **rubber** (NR), isoprene **rubber** (IR) or at least 2 of the polar polymers of **polyvinyl chloride**, chlorinate polyethylene, acrylonitrile, acrylonitrile-butadiene **rubber**, styrene-butadiene **rubber** and chloroprene **rubber**.

USE - The energy conversion composition can be used to make damping material, non-restricted damping material, damping paint, sound absorption material, sound absorption sheet, foamed sound absorption material, sound absorption fibre, sound absorption yarn, sound **absorption** fibre body, **impact absorption** material, front fork, grip tape, shoe sole, **electromagnetic wave absorption** material, **electromagnetic wave absorption** paint, **vibration proofing** material, **piezoelectric** material (all claimed).

ADVANTAGE - The composition can absorb and convert energy including mechanical, thermal, optical and electrical energy, have excellent performance such as maintaining transparency, mechanical strength and processability, and have possibility of reducing thickness and volume of the composition. The base material can be cheap plastics.

Dwg.2,5/69

FS CPI EPI GMPI

FA AB; GI; DCN



MC CPI: A12-E15; A12-H; A12-R06; A12-W; E06-F05; F01-D; F04-E06; G04-B;  
 G04-B01; L03-D01B; L03-G  
 EPI: U11-A02; U14-G; V04-U; V06-K02; V06-K05; V06-L01A; V06-M06D;  
 V07-K; W02-B03D1  
 DRN 1167-U  
 PLE UPA 19980410

L111 ANSWER 9 OF 10 WPIX COPYRIGHT 2003 THOMSON DERWENT on STN

AN 1982-B0571E [05] WPIX

TI Motor vehicle front wheel suspension - has **stabiliser**  
 counteracting bending **moment** exerted on mcpherson strut on  
 each side.

DC Q12

IN ARMBRUST, E

PA (PORS) PORSCHE AG F

CYC 4

PI EP 44579 A 19820127 (198205)\* DE 9p <--  
 R: FR GB IT  
 DE 3027694 A 19820218 (198208) <--  
 EP 44579 B 19850213 (198507) DE <--  
 R: FR GB IT

ADT EP 44579 A EP 1981-200630 19810609

PRAI DE 1980-3027694 19800722

REP DE 1244593; DE 1580480; DE 2116981; DE 2460178; DE 2902124; DE  
 2932699; FR 2097496; US 2254325; US 2961253; US 4143887; US 4153272

IC B60G013-00; B60G015-00; B60G021-04

AB EP 44579 A UPAB: 19930915

With motor vehicles fitted with McPherson strut (3) front  
 suspension, the bending moment due to reaction of the load on the  
 road wheel (1) causes a piston (5) to jam in the bore of the  
 cylinder (4). This defect is eliminated by a stabiliser (11) in the  
 form of a U-shaped rod.

The arms (15) of the stabiliser pass through **rubber**  
 bushes which are fitted in lugs (10) projecting from the surface of  
 the strut cylinder. The **rubber** bushes have spherical  
 outer surfaces which enable them to rotate in the plane of the  
 stabiliser as the cylinder rotates about the piston rod when the  
 vehicle is steered. As the stabiliser is connected to the struts of  
 both front wheels the forces due to the bending moments exerted by  
 the wheel reactions balance each other.

1

ABEQ EP 44579 B UPAB: 19930915

A wheel suspension for motor vehicles with a lower transverse link  
 (2) supported by way of a **shock-absorbing** leg  
 (3) on the vehicle body (7), there being provided on the  
**shock-absorbing** leg (3) a means which counteracts  
 a bending moment (Ma) exerted by a wheel load (Fa) from the  
**shock-absorbing** leg (3), characterised in that the  
 means is in the form of a U-shaped stabiliser (11) which is held on  
 the body (7) by a transversely extending cross-member (13) by way of  
 bearings (14), and its arms which are angled in the longitudinal

direction of the vehicle are connected to cylinders (4) of the **shock-absorbing** legs (3) on each side of the wheel by way of a holding apparatus (10) and have an additional bending forward which is directed towards the outside of the wheel with the force (Fb) which is independent of the torsional force of the stabiliser (11).

FS GMPI  
FA AB

L111 ANSWER 10 OF 10 WPIX COPYRIGHT 2003 THOMSON DERWENT on STN  
AN 1977-90411Y [51] WPIX  
TI Hollow heald frame sections - has at least one opposed wall provided with opening in which is inserted an elastomeric member for **suppression of vibrations**.

DC F03 Q63  
PA (BADE-I) BADER H; (SULZ) GEBR SULZER AG  
CYC 8

PI	DE 2627450	A	19771215 (197751)*	<--
	FR 2354483	A	19780210 (197812)	<--
	AT 7604360	A	19780315 (197813)	<--
	DE 2627450	B	19780720 (197830)	<--
	US 4144910	A	19790320 (197914)	<--
	CH 610993	A	19790515 (197923)	<--
	SU 704465	A	19791225 (198032)	<--
	GB 1583516	A	19810128 (198105)	<--
	IT 1084355	B	19850525 (198618)	<--

PRAI CH 1976-7171 19760608

IC D03C009-06; D03D049-00; F16F015-04  
AB DE 2627450 A UPAB: 19930901

Hollow tubular section having opposed walls is provided at least in one of the walls, with an opening in which is located an insert of **vibration suppressing** material.

Pref. the insert which is made of **rubber**, **polyvinyl chloride** or polyurethane is formed as a disc which extends between the walls and has a rebated portion which projects out of the opening. The insert which may have frusto-conical side walls may be bonded to the walls or held frictionally between them.

Arrangement is used in heald frame sections of heald frame drive members in looms. Bending **moments** are **suppressed**.

FS CPI GMPI  
FA AB  
MC CPI: F02-A02

=> file hca

FILE 'HCA' ENTERED AT 11:12:49 ON 10 OCT 2003  
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.  
PLEASE SEE "HELP USAGETERMS" FOR DETAILS.  
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=> d l66 1-5 cbib abs hitstr hitind

L66 ANSWER 1 OF 5 HCA COPYRIGHT 2003 ACS on STN

134:57842 Tires with low noise. Ohira, Yasuyuki; Hori, Mitsuo  
(Shishiai-Kabushikigaisha, Japan). PCT Int. Appl. WO 2000078562 A1  
20001228, 22 pp. DESIGNATED STATES: W: JP. (Japanese). CODEN:  
PIXXD2. APPLICATION: WO 1999-JP3308 19990621.

AB Title tires contain **vibration-damping** materials  
prepd. from base polymers and 10-400% (preferably; based on 100  
parts base polymers) active components adapted to increase a  
**dipole moment** in the base polymers. A mixt. of 9  
parts Elaslen 352NA, 65% mica, and 26% N,N-  
**dicylcohexylbenzothiazyl-2-sulfenamide** was kneaded and  
pressed at 180.degree. to form a sheet, which was bound to the tire  
tread interior to achieve a noise redn.

IT 9002-88-4D, chlorinated  
(chlorinated polyethylene **rubber**, Elaslen 352NA; tires  
contg. **vibration dampers** prepd. from  
**dipole moment activator**-contg.  
polymers)

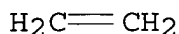
RN 9002-88-4 HCA

CN Ethene, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 74-85-1

CMF C2 H4



IT 9003-31-0  
(isoprene **rubber**, tires contg. **vibration  
dampers** prepd. from **dipole moment  
activator**-contg. polymers)

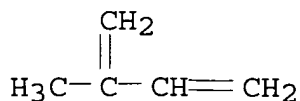
RN 9003-31-0 HCA

CN 1,3-Butadiene, 2-methyl-, homopolymer (9CI) (CA INDEX NAME)

CM 1

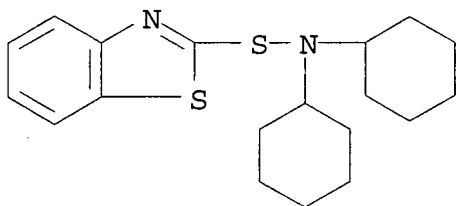
CRN 78-79-5

CMF C5 H8



IT 4979-32-2  
(tires contg. **vibration dampers** prepd. from  
**dipole moment activator**-contg.

polymers)  
 RN 4979-32-2 HCA  
 CN 2-Benzothiazolesulfenamide, N,N-dicyclohexyl- (6CI, 7CI, 8CI, 9CI)  
 (CA INDEX NAME)

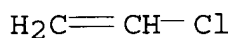


IT 9002-86-2, PVC 9002-88-4, Polyethylene  
 9003-07-0, Polypropylene 9003-53-6, Polystyrene  
 9003-54-7, Acrylonitrile-styrene copolymer 9003-56-9  
 , ABS polymer 9011-14-7, PMMA 24937-78-8,  
 Ethylene-vinyl acetate copolymer 24937-79-9, PVDF  
 (tires contg. **vibration dampers** prepd. from  
**dipole moment activator**-contg.  
 polymers)

RN 9002-86-2 HCA  
 CN Ethene, chloro-, homopolymer (9CI) (CA INDEX NAME)

CM 1

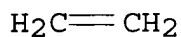
CRN 75-01-4  
 CMF C2 H3 Cl



RN 9002-88-4 HCA  
 CN Ethene, homopolymer (9CI) (CA INDEX NAME)

CM 1

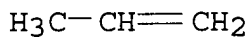
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 CMF C2 H4



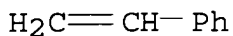
RN 9003-07-0 HCA  
 CN 1-Propene, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 115-07-1  
 CMF C3 H6



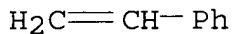
RN 9003-53-6 HCA  
CN Benzene, ethenyl-, homopolymer (9CI) (CA INDEX NAME)  
CM 1  
CRN 100-42-5  
CMF C8 H8



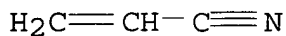
RN 9003-54-7 HCA  
CN 2-Propenenitrile, polymer with ethenylbenzene (9CI) (CA INDEX NAME)  
CM 1  
CRN 107-13-1  
CMF C3 H3 N



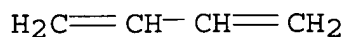
CM 2  
CRN 100-42-5  
CMF C8 H8



RN 9003-56-9 HCA  
CN 2-Propenenitrile, polymer with 1,3-butadiene and ethenylbenzene  
(9CI) (CA INDEX NAME)  
CM 1  
CRN 107-13-1  
CMF C3 H3 N



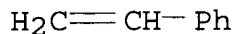
CM 2  
CRN 106-99-0  
CMF C4 H6



CM 3

CRN 100-42-5

CMF C8 H8



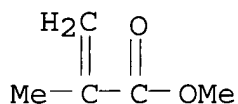
RN 9011-14-7 HCA

CN 2-Propenoic acid, 2-methyl-, methyl ester, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 80-62-6

CMF C5 H8 O2



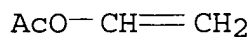
RN 24937-78-8 HCA

CN Acetic acid ethenyl ester, polymer with ethene (9CI) (CA INDEX NAME)

CM 1

CRN 108-05-4

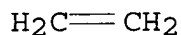
CMF C4 H6 O2



CM 2

CRN 74-85-1

CMF C2 H4

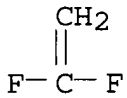


RN 24937-79-9 HCA

CN Ethene, 1,1-difluoro-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 75-38-7  
CMF C2 H2 F2



IC ICM B60C001-00  
ICS B60C005-00; C08L101-00; C08L021-00; C08K005-47; C08K005-07;  
C08K005-3475; C08K005-315

CC 39-13 (Synthetic Elastomers and Natural Rubber)

ST tire noise **redn vibration damper**  
**dipole moment activator**

IT Chlorinated polyethylene rubber  
(Elaslen 352NA; tires contg. **vibration dampers**  
prepd. from **dipole moment activator**  
-contg. polymers)

IT Butyl rubber, uses  
(halogenated; tires contg. **vibration dampers**  
prepd. from **dipole moment activator**  
-contg. polymers)

IT Mica-group minerals, uses  
(in **vibration damper** sheets; tires contg.  
**vibration dampers** prepd. from **dipole**  
**moment activator**-contg. polymers)

IT Amides, uses  
Sulfenyl compounds  
(sulfenamides; tires contg. **vibration dampers**  
prepd. from **dipole moment activator**  
-contg. polymers)

IT **Vibration dampers**  
(tires contg. **vibration dampers** prepd. from  
**dipole moment activator**-contg.  
polymers)

IT Butadiene rubber, uses  
EPDM rubber  
Fluoropolymers, uses  
Isoprene rubber, uses  
Natural rubber, uses  
Nitrile rubber, uses  
Styrene-butadiene rubber, uses  
(tires contg. **vibration dampers** prepd. from  
**dipole moment activator**-contg.  
polymers)

IT Tires  
(treads; tires contg. **vibration dampers**  
prepd. from **dipole moment activator**  
-contg. polymers)

IT 9003-17-2  
(butadiene rubber, tires contg. **vibration**  
**dampers** prepd. from **dipole moment**

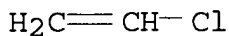
- activator-contg. polymers)**
- IT 9010-85-9  
(butyl **rubber**, halogenated; tires contg. **vibration dampers** prepd. from **dipole moment activator-contg. polymers)**
- IT 9002-88-4D, chlorinated  
(chlorinated polyethylene **rubber**, Elaslen 352NA; tires contg. **vibration dampers** prepd. from **dipole moment activator-contg. polymers)**
- IT 9003-31-0  
(isoprene **rubber**, tires contg. **vibration dampers** prepd. from **dipole moment activator-contg. polymers)**
- IT 9003-18-3  
(nitrile **rubber**, tires contg. **vibration dampers** prepd. from **dipole moment activator-contg. polymers)**
- IT 9003-55-8  
(styrene-butadiene **rubber**, tires contg. **vibration dampers** prepd. from **dipole moment activator-contg. polymers)**
- IT 119-61-9, Benzophenone, uses 4979-32-2  
(tires contg. **vibration dampers** prepd. from **dipole moment activator-contg. polymers)**
- IT 9002-86-2, PVC 9002-88-4, Polyethylene 9003-07-0, Polypropylene 9003-53-6, Polystyrene 9003-54-7, Acrylonitrile-styrene copolymer 9003-56-9, ABS polymer 9011-14-7, PMMA 24937-78-8, Ethylene-vinyl acetate copolymer 24937-79-9, PVDF  
(tires contg. **vibration dampers** prepd. from **dipole moment activator-contg. polymers)**
- L66 ANSWER 2 OF 5 HCA COPYRIGHT 2003 ACS on STN  
133:90621 Built-in-motor-equipped precision devices containing **vibration dampers**. Ohira, Yasuyuki; Hori, Mitsuo (Shishiai-Kabushikigaisha, Japan). PCT Int. Appl. WO 2000041179 A1 20000713, 34 pp. DESIGNATED STATES: W: JP. (Japanese). CODEN: PIXXD2. APPLICATION: WO 1998-JP6012 19981228.
- AB Title devices contain **vibration dampers** prepd. from polymeric components which are **dipole-bound** to active components to increase the **dipole moment** in order to absorb and eliminate the noise and chattering caused by the vibration. A mixt. of 100:40 Elaslene 352NA and N,N-dicyclohexylbenzothiazyl-2-sulfenamide was made into a sheet useful at 10-20.degree. region and showing 160-Hz nose level 60.4 dB.
- IT 9002-86-2, PVC  
(active compd.-contg. polymer-based **vibration dampers** for built-in-motor-contg. precision devices)



RN 9002-86-2 HCA  
 CN Ethene, chloro-, homopolymer (9CI) (CA INDEX NAME)

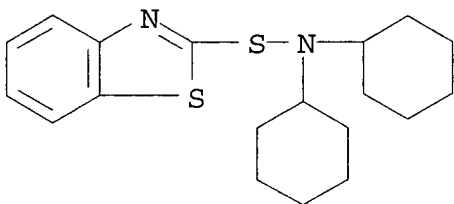
CM 1

CRN 75-01-4  
 CMF C2 H3 Cl



IT 4979-32-2  
 (active compds.; active compd.-contg. polymer-based  
**vibration dampers** for built-in-motor-contg.  
 precision devices)

RN 4979-32-2 HCA  
 CN 2-Benzothiazolesulfenamide, N,N-dicyclohexyl- (6CI, 7CI, 8CI, 9CI)  
 (CA INDEX NAME)



IC ICM G11B033-08  
 ICS G11B033-02; F16F015-02; F16F015-08; C08L101-00; C08K005-00;  
 C08K005-3467; C08K005-36; C08J005-00; C08J003-12; C08J003-20  
 CC 39-15 (Synthetic Elastomers and Natural Rubber)  
 Section cross-reference(s): 38, 74, 77  
 ST magnetic recording device **vibration damper**  
 polymer **dipole moment**; video camera  
**vibration damper** polymer **benzothiazole**  
 blend  
 IT Chlorinated polyethylene **rubber**  
 (Elaslen; active compd.-contg. polymer-based **vibration**  
**dampers** for built-in-motor-contg. precision devices)  
 IT **Dipole moment**  
 Magnetic memory devices  
**Vibration dampers**  
 Video cameras  
 (active compd.-contg. polymer-based **vibration**  
**dampers** for built-in-motor-contg. precision devices)  
 IT Acrylic **rubber**  
 Butadiene **rubber**, uses  
 Fluoropolymers, uses  
 Isoprene **rubber**, uses  
 Natural **rubber**, uses  
 Neoprene **rubber**, uses

Nitrile **rubber**, uses

Styrene-butadiene **rubber**, uses

(active compd.-contg. polymer-based **vibration dampers** for built-in-motor-contg. precision devices)

IT Aromatic compounds

(**benzothiazole**, **benzotriazole**, benzophenone, active compds.; active compd.-contg. polymer-based **vibration dampers** for built-in-motor-contg. precision devices)

IT 9002-86-2, PVC 9002-88-4, Polyethylene 9003-07-0, Polypropylene 9003-31-0, Polyisoprene 9003-53-6, Polystyrene 9003-54-7, Acrylonitrile-styrene copolymer 9003-56-9, ABS polymer 9011-14-7, PMMA 24937-78-8, Ethylene-vinyl acetate copolymer 24937-79-9, PVDF

(active compd.-contg. polymer-based **vibration dampers** for built-in-motor-contg. precision devices)

IT 84-61-7, Dicyclohexyl phthalate 4979-32-2 (active compds.; active compd.-contg. polymer-based **vibration dampers** for built-in-motor-contg. precision devices)

IT 9003-17-2 (butadiene **rubber**, active compd.-contg. polymer-based **vibration dampers** for built-in-motor-contg. precision devices)

IT 9002-88-4D, chlorinated (chlorinated polyethylene **rubber**, Elaslen; active compd.-contg. polymer-based **vibration dampers** for built-in-motor-contg. precision devices)

IT 9003-31-0 (isoprene **rubber**, active compd.-contg. polymer-based **vibration dampers** for built-in-motor-contg. precision devices)

IT 9010-98-4 (neoprene **rubber**, active compd.-contg. polymer-based **vibration dampers** for built-in-motor-contg. precision devices)

IT 9003-18-3 (nitrile **rubber**, active compd.-contg. polymer-based **vibration dampers** for built-in-motor-contg. precision devices)

IT 9003-55-8 (styrene-butadiene **rubber**, active compd.-contg. polymer-based **vibration dampers** for built-in-motor-contg. precision devices)

L66 ANSWER 3 OF 5 HCA COPYRIGHT 2003 ACS on STN

132:153020 Pellets for vibration-control resin moldings. Ohira, Yasuyuki; Hori, Mitsuo (Shishiai-Kabushikigaisha, Japan). PCT Int. Appl. WO 2000007789 A1 20000217, 18 pp. DESIGNATED STATES: W: JP. (Japanese). CODEN: PIXXD2. APPLICATION: WO 1998-JP3543 19980807.

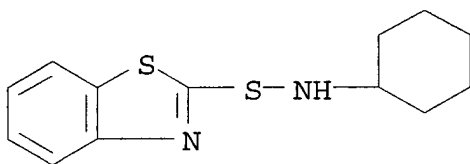
AB Pellets for the title moldings capable of **absorbing** and **damping vibration** propagating through, or

occurring from, machinery, appliances, structures, etc., contain a base resin (e.g., ABS resin), an active component for increasing a **dipole moment** in the base resin (e.g., **benzothiazole** group-contg. compds.), and an inorg. filler.

IT 95-33-0, CBS  
(active components; pellets contg. active components for increasing **dipole moment** for **vibration dampers**)

RN 95-33-0 HCA

CN 2-Benzothiazolesulfenamide, N-cyclohexyl- (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



IT 9002-86-2, PVC  
(pellets contg. active components for increasing **dipole moment** for **vibration dampers**)

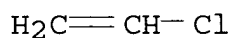
RN 9002-86-2 HCA

CN Ethene, chloro-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 75-01-4

CMF C2 H3 Cl



IC ICM B29B009-12

ICS C08L101-00; C08K005-36; C08K005-3492; C08K005-00; C08K003-00

CC 38-3 (Plastics Fabrication and Uses)  
Section cross-reference(s): 39

ST **dipole moment** active component **vibration damper**; ABS resin **vibration damper**

IT Fillers  
(mica; pellets contg. active components for increasing **dipole moment** for **vibration dampers**)

IT **Dipole moment**  
**Vibration dampers**  
(pellets contg. active components for increasing **dipole moment** for **vibration dampers**)

IT Butadiene **rubber**, uses  
Fluoropolymers, uses  
Isoprene **rubber**, uses  
Natural **rubber**, uses  
Nitrile **rubber**, uses

- Styrene-butadiene **rubber**, uses  
(pellets contg. active components for increasing **dipole moment for vibration dampers**)
- IT 9003-56-9, ABS resin  
(GA 704; pellets contg. active components for increasing **dipole moment for vibration dampers**)
- IT 95-33-0, CBS  
(active components; pellets contg. active components for increasing **dipole moment for vibration dampers**)
- IT 9003-17-2  
(butadiene **rubber**, pellets contg. active components for increasing **dipole moment for vibration dampers**)
- IT 471-34-1, Calcium carbonate, uses  
(fillers; pellets contg. active components for increasing **dipole moment for vibration dampers**)
- IT 9003-31-0  
(isoprene **rubber**, pellets contg. active components for increasing **dipole moment for vibration dampers**)
- IT 9003-18-3  
(nitrile **rubber**, pellets contg. active components for increasing **dipole moment for vibration dampers**)
- IT 9002-86-2, PVC 9002-88-4, Polyethylene  
9002-88-4D, Polyethylene, chlorinated 9003-07-0, Polypropylene  
9003-31-0, Polyisoprene 9003-53-6, Polystyrene 9003-54-7,  
Acrylonitrile-styrene copolymer 9011-14-7, Polymethyl methacrylate  
24937-78-8, EVA 24937-79-9, Polyvinylidene fluoride  
(pellets contg. active components for increasing **dipole moment for vibration dampers**)
- IT 9003-55-8  
(styrene-butadiene **rubber**, pellets contg. active components for increasing **dipole moment for vibration dampers**)
- L66 ANSWER 4 OF 5 HCA COPYRIGHT 2003 ACS on STN  
129:331903 **Vibration-damping** sheets for building materials. Ohira, Yasuyuki; Hori, Mitsuo (CCI Corp., Japan). Jpn. Kokai Tokkyo Koho JP 10268870 A2 19981009 Heisei, 7 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1997-73506 19970326.
- AB Title sheets bear a layer contg. active components for increase of **dipole moment**. Thus, coating a compn. contg. BC 280 (acrylic styrene copolymer) and Sanceler DZ (N,N-dicyclohexylbenzothiazyl-2-sulfenamide) on a plywood gave a sheet showing good **vibration-damping** property.
- IT 9002-86-2, Poly(vinyl chloride)  
(binder; in **vibration-damping** sheets for

building materials)

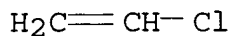
RN 9002-86-2 HCA

CN Ethene, chloro-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 75-01-4

CMF C2 H3 Cl



IT 120-78-5, Dibenzothiazyl disulfide

149-30-4, 2-Mercaptobenzothiazole

2440-22-4, 2-(2'-Hydroxy-5'-methylphenyl)

benzotriazole 3864-99-1 3896-11-5

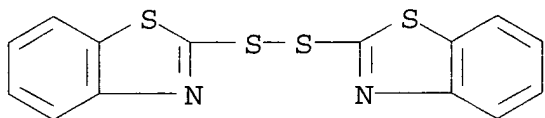
4979-32-2, Sanceler DZ 5232-99-5, Ethyl

2-cyano-3,3-diphenylacrylate 59129-18-9

(in vibration-damping sheets for building materials)

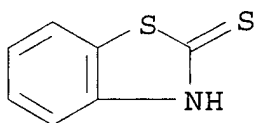
RN 120-78-5 HCA

CN Benzothiazole, 2,2'-dithiobis- (8CI, 9CI) (CA INDEX NAME)



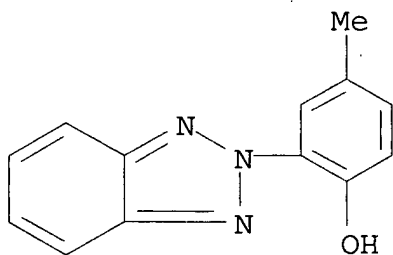
RN 149-30-4 HCA

CN 2(3H)-Benzothiazolethione (9CI) (CA INDEX NAME)



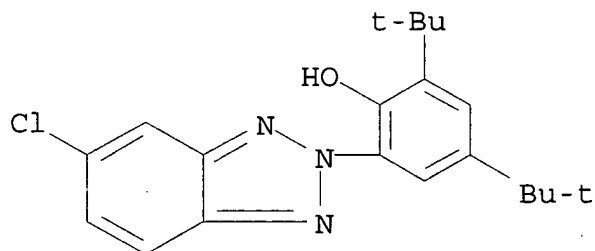
RN 2440-22-4 HCA

CN Phenol, 2-(2H-benzotriazol-2-yl)-4-methyl- (9CI) (CA INDEX NAME)



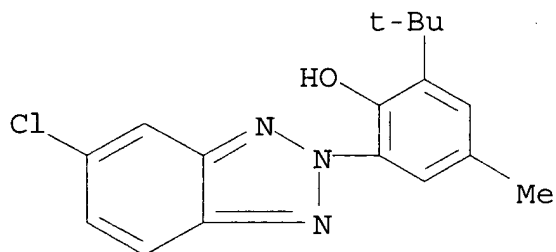
RN 3864-99-1 HCA

CN Phenol, 2-(5-chloro-2H-benzotriazol-2-yl)-4,6-bis(1,1-dimethylethyl)-  
(9CI) (CA INDEX NAME)



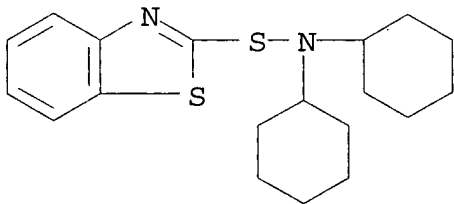
RN 3896-11-5 HCA

CN Phenol, 2-(5-chloro-2H-benzotriazol-2-yl)-6-(1,1-dimethylethyl)-4-methyl- (9CI) (CA INDEX NAME)



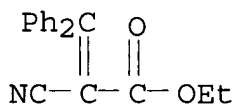
RN 4979-32-2 HCA

CN 2-Benzothiazolesulfenamide, N,N-dicyclohexyl- (6CI, 7CI, 8CI, 9CI)  
(CA INDEX NAME)



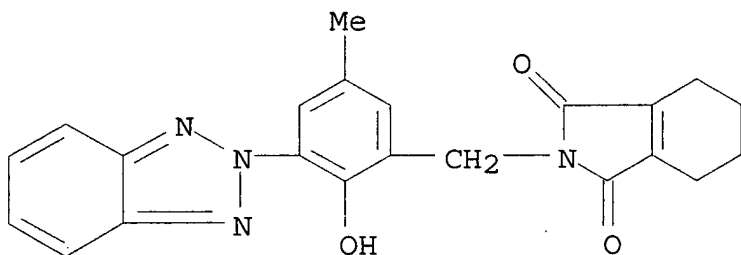
RN 5232-99-5 HCA

CN 2-Propenoic acid, 2-cyano-3,3-diphenyl-, ethyl ester (9CI) (CA INDEX NAME)



RN 59129-18-9 HCA

CN 1H-Isoindole-1,3(2H)-dione, 2-[[3-(2H-benzotriazol-2-yl)-2-hydroxy-5-methylphenyl]methyl]-4,5,6,7-tetrahydro- (9CI) (CA INDEX NAME)



- IC ICM G10K011-162  
ICS C09D005-00; E04B001-82
- CC 38-3 (Plastics Fabrication and Uses)  
Section cross-reference(s): 43
- ST **vibration damper dipole moment**  
building material; **mercaptobenzothiazole vibration damper** building material; **benzotriazole vibration damper** building material; phenyl acrylate **vibration damper** building material
- IT Acrylic **rubber**  
Neoprene **rubber**, uses  
Nitrile **rubber**, uses  
Styrene-butadiene **rubber**, uses  
(binder; in **vibration-damping** sheets for building materials)
- IT Wood  
(plywood; **vibration-damping** sheets for building materials)
- IT Construction materials  
**Vibration dampers**  
(**vibration-damping** sheets for building materials)
- IT Acrylic polymers, uses  
(with styrene; in **vibration-damping** sheets for building materials)
- IT 9002-86-2, Poly(vinyl chloride)  
(binder; in **vibration-damping** sheets for building materials)
- IT 100-42-5D, acrylic polymers 9002-88-4D, chlorinated  
(binder; in **vibration-damping** sheets for building materials)
- IT 120-78-5, Dibenzothiazyl disulfide  
149-30-4, 2-Mercaptobenzothiazole  
2440-22-4, 2-(2'-Hydroxy-5'-methylphenyl) benzotriazole 3864-99-1 3896-11-5  
4979-32-2, Sanceler DZ 5232-99-5, Ethyl 2-cyano-3,3-diphenylacrylate 59129-18-9  
(in **vibration-damping** sheets for building materials)
- IT 215112-39-3, BC 280

(in **vibration-damping** sheets for building materials)

IT 9010-98-4  
(neoprene **rubber**, binder; in **vibration-damping** sheets for building materials)

IT 9003-18-3  
(nitrile **rubber**, binder; in **vibration-damping** sheets for building materials)

IT 9003-55-8  
(styrene-butadiene **rubber**, binder; in **vibration-damping** sheets for building materials)

L66 ANSWER 5 OF 5 HCA COPYRIGHT 2003 ACS on STN  
128:13740 Energy conversion compositions for **vibration-damping** materials and coatings; sound-absorbing materials, sheets, foams, and fibers; **impact absorbers**; front forks; grip tapes; shoe soles; electromagnetic shields; piezoelec. materials. (Japan). PCT Int. Appl. WO 9742844 A1 **19971120**, 226 pp. DESIGNATED STATES: W: AU, BR, CA, CN, HU, IL, JP, KR, MX, NO, NZ, RU, SG, TR, US; RW: AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE. (Japanese). CODEN: PIXXD2. APPLICATION: WO 1997-JP1124 19970328. PRIORITY: JP 1996-116269 19960510; JP 1996-136583 19960530; JP 1996-150592 19960612; JP 1996-169162 19960628; JP 1996-232810 19960903; JP 1996-295076 19961107; JP 1996-295297 19961107; JP 1996-300586 19961112; JP 1996-303295 19961114; JP 1996-308526 19961119; JP 1996-314725 19961126; JP 1996-323120 19961203; JP 1996-350649 19961227; JP 1997-12842 19970127; JP 1997-22846 19970205; JP 1997-36159 19970220; JP 1997-52921 19970307.

AB The title compns. showing an excellent performance even at reduced thickness and vol. comprise matrix materials (e.g., polymers, water, glycols, etc.) and an active component which increases the level of **dipole moment** in the base material. A **vibration-damping** sheet comprised AR-15 acrylic **rubber** and 10 phr N,N-dicyclohexylbenzothiazyl-2-sulfenamide. 264 Claims.

IT 9002-86-2, PVC  
(energy conversion compns. for **vibration-damping** materials and coatings; sound-absorbing materials, sheets, foams, and fibers; **impact absorbers**; front forks; grip tapes; shoe soles; electromagnetic shields; piezoelec. materials)

RN 9002-86-2 HCA  
CN Ethene, chloro-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 75-01-4  
CMF C2 H3 C1

H<sub>2</sub>C=CH-Cl

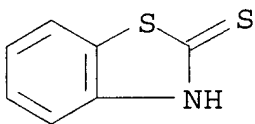


IT 149-30-4, 2-Mercaptobenzothiazole  
 3864-99-1 3896-11-5 4074-77-5,  
 Dibenzothiazolyl sulfide 4979-32-2, N,N-  
 Dicyclohexylbenzothiazolyl-2-sulfenamide 5232-99-5  
 , Ethyl 2-cyano-3,3-diphenylacrylate 21703-55-9,  
 2-(2-Hydroxy-5-methylphenyl)benzothiazole  
 198566-86-8

(energy conversion compns. for **vibration-damping** materials and coatings; sound-absorbing materials, sheets, foams, and fibers; **impact absorbers**; front forks; grip tapes; shoe soles; electromagnetic shields; piezoelec. materials)

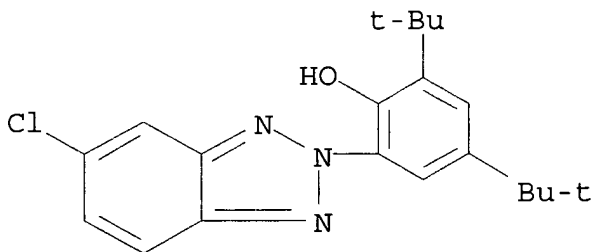
RN 149-30-4 HCA

CN 2(3H)-Benzothiazolethione (9CI) (CA INDEX NAME)



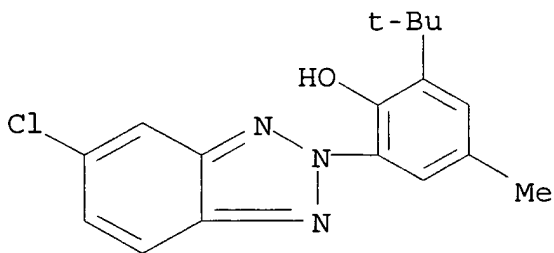
RN 3864-99-1 HCA

CN Phenol, 2-(5-chloro-2H-benzotriazol-2-yl)-4,6-bis(1,1-dimethylethyl)-(9CI) (CA INDEX NAME)



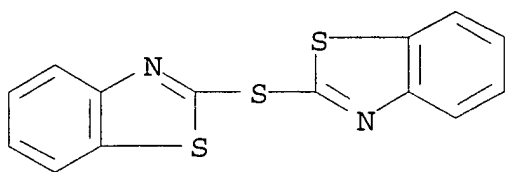
RN 3896-11-5 HCA

CN Phenol, 2-(5-chloro-2H-benzotriazol-2-yl)-6-(1,1-dimethylethyl)-4-methyl-(9CI) (CA INDEX NAME)



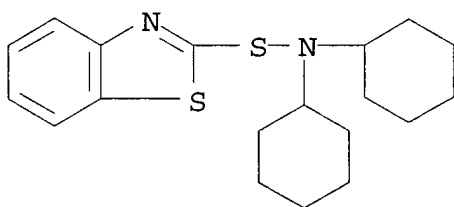
RN 4074-77-5 HCA

CN Benzothiazole, 2,2'-thiobis- (7CI, 8CI, 9CI) (CA INDEX NAME)



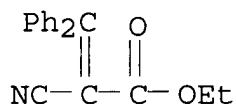
RN 4979-32-2 HCA

CN 2-Benzothiazolesulfenamide, N,N-dicyclohexyl- (6CI, 7CI, 8CI, 9CI)  
(CA INDEX NAME)



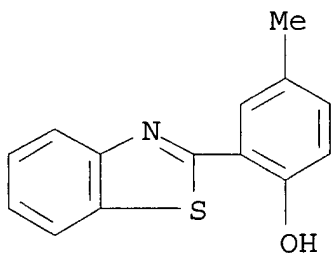
RN 5232-99-5 HCA

CN 2-Propenoic acid, 2-cyano-3,3-diphenyl-, ethyl ester (9CI) (CA INDEX NAME)



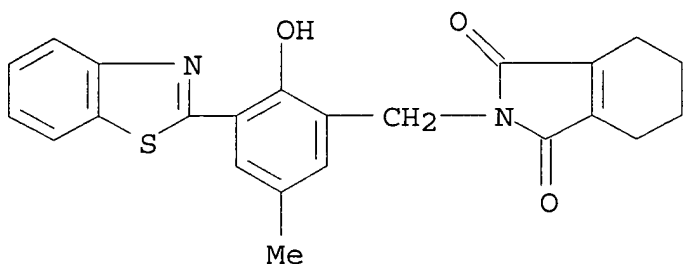
RN 21703-55-9 HCA

CN Phenol, 2-(2-benzothiazolyl)-4-methyl- (9CI) (CA INDEX NAME)



RN 198566-86-8 HCA

CN 1H-Isoindole-1,3(2H)-dione, 2-[[3-(2-benzothiazolyl)-2-hydroxy-5-methylphenyl]methyl]-4,5,6,7-tetrahydro- (9CI) (CA INDEX NAME)



- IC ICM A43B013-38  
 ICS B32B005-18; B29D031-00; C08L101-00; C09D201-00; C09J007-02;  
 C09K003-00; D01F006-00; E01F008-00; G10K011-16; H01Q017-00;  
 H03H009-17; H03H009-25; H05B006-76; H05K009-00; H01L041-09;  
 H01L041-193; G02F001-35; E04B001-82; B60R013-08
- CC 37-6 (Plastics Manufacture and Processing)
- ST energy conversion compn **vibration damper**; sound  
 absorber energy conversion compn; **impact absorber**  
 energy conversion compn; front fork energy conversion compn; grip  
 tape energy conversion compn; shoe sole energy conversion compn;  
 electromagnetic shield energy conversion compn; piezoelec material  
 energy conversion compn; fiber sound insulator; acrylic  
**rubber benzothiazylsulfenamide vibration**  
**damper**
- IT Chlorinated polyethylene **rubber**  
 (Elaslen; energy conversion compns. for **vibration-**  
**damping** materials and coatings; sound-absorbing  
 materials, sheets, foams, and fibers; **impact**  
**absorbers**; front forks; grip tapes; shoe soles;  
 electromagnetic shields; piezoelec. materials)
- IT Adhesive tapes  
 Electromagnetic shields  
 Energy  
 Piezoelectric materials  
**Shock absorbers**  
 Sound insulators  
**Vibration dampers**  
 (energy conversion compns. for **vibration-**  
**damping** materials and coatings; sound-absorbing  
 materials, sheets, foams, and fibers; **impact**  
**absorbers**; front forks; grip tapes; shoe soles;  
 electromagnetic shields; piezoelec. materials)
- IT Mica-group minerals, uses  
 (energy conversion compns. for **vibration-**  
**damping** materials and coatings; sound-absorbing  
 materials, sheets, foams, and fibers; **impact**  
**absorbers**; front forks; grip tapes; shoe soles;  
 electromagnetic shields; piezoelec. materials)
- IT Acrylic **rubber**  
 Butadiene **rubber**, properties  
 Fluoropolymers, properties

Isoprene **rubber**, properties  
Natural **rubber**, properties  
Neoprene **rubber**, properties  
Nitrile **rubber**, properties  
Polyamides, properties  
Polyesters, properties  
Polyolefins  
Polyurethanes, properties  
Styrene-butadiene **rubber**, properties  
    (energy conversion compns. for **vibration-damping** materials and coatings; sound-absorbing materials, sheets, foams, and fibers; **impact absorbers**; front forks; grip tapes; shoe soles; electromagnetic shields; piezoelec. materials)  
IT Synthetic polymeric fibers, uses  
    Vinyon fibers  
        (energy conversion compns. for **vibration-damping** materials and coatings; sound-absorbing materials, sheets, foams, and fibers; **impact absorbers**; front forks; grip tapes; shoe soles; electromagnetic shields; piezoelec. materials)  
IT Automobiles  
    (parts, energy conversion compns. for **vibration-damping** materials and coatings; sound-absorbing materials, sheets, foams, and fibers; **impact absorbers**; front forks; grip tapes; shoe soles; electromagnetic shields; piezoelec. materials)  
IT Shoes  
    (soles, energy conversion compns. for **vibration-damping** materials and coatings; sound-absorbing materials, sheets, foams, and fibers; **impact absorbers**; front forks; grip tapes; shoe soles; electromagnetic shields; piezoelec. materials)  
IT 9003-17-2  
    (butadiene **rubber**, energy conversion compns. for **vibration-damping** materials and coatings; sound-absorbing materials, sheets, foams, and fibers; **impact absorbers**; front forks; grip tapes; shoe soles; electromagnetic shields; piezoelec. materials)  
IT 9002-88-4D, chlorinated  
    (chlorinated polyethylene **rubber**, Elaslen; energy conversion compns. for **vibration-damping** materials and coatings; sound-absorbing materials, sheets, foams, and fibers; **impact absorbers**; front forks; grip tapes; shoe soles; electromagnetic shields; piezoelec. materials)  
IT 471-34-1, Calcium carbonate, uses 61076-94-6, 200HK  
    (energy conversion compns. for **vibration-damping** materials and coatings; sound-absorbing materials, sheets, foams, and fibers; **impact absorbers**; front forks; grip tapes; shoe soles; electromagnetic shields; piezoelec. materials)

- IT 108-05-4D, Acetic acid ethenyl ester, acrylic copolymers, properties  
9002-85-1, Poly(vinylidene chloride) **9002-86-2**,  
**PVC** 9002-88-4, Polyethylene 9002-88-4D, Polyethylene,  
chlorinated 9002-89-5, Polyvinyl alcohol 9003-07-0,  
Polypropylene 9003-31-0, Polyisoprene 9003-53-6, Polystyrene  
9003-54-7, Acrylonitrile-styrene copolymer 9003-56-9, ABS polymer  
9004-34-6, Cellulose, properties 9011-14-7, PMMA 24937-78-8, EVA  
24937-79-9, PVDF 25014-41-9, Polyacrylonitrile 130175-80-3,  
Voncoat EC 818 198907-42-5, VN 168 198970-58-0  
(energy conversion compns. for **vibration-**  
**damping** materials and coatings; sound-absorbing  
materials, sheets, foams, and fibers; **impact**  
**absorbers**; front forks; grip tapes; shoe soles;  
electromagnetic shields; piezoelec. materials)
- IT 149-30-4, 2-Mercaptobenzothiazole  
3864-99-1 3896-11-5 4074-77-5,  
Dibenzothiazolyl sulfide 4979-32-2, N,N-  
Dicyclohexylbenzothiazolyl-2-sulfenamide 5232-99-5  
, Ethyl 2-cyano-3,3-diphenylacrylate 21703-55-9,  
2-(2-Hydroxy-5-methylphenyl)benzothiazole  
198566-86-8  
(energy conversion compns. for **vibration-**  
**damping** materials and coatings; sound-absorbing  
materials, sheets, foams, and fibers; **impact**  
**absorbers**; front forks; grip tapes; shoe soles;  
electromagnetic shields; piezoelec. materials)
- IT 9003-31-0  
(isoprene **rubber**, energy conversion compns. for  
**vibration-damping** materials and coatings;  
sound-absorbing materials, sheets, foams, and fibers;  
**impact absorbers**; front forks; grip tapes; shoe  
soles; electromagnetic shields; piezoelec. materials)
- IT 9010-98-4  
(neoprene **rubber**, energy conversion compns. for  
**vibration-damping** materials and coatings;  
sound-absorbing materials, sheets, foams, and fibers;  
**impact absorbers**; front forks; grip tapes; shoe  
soles; electromagnetic shields; piezoelec. materials)
- IT 9003-18-3  
(nitrile **rubber**, energy conversion compns. for  
**vibration-damping** materials and coatings;  
sound-absorbing materials, sheets, foams, and fibers;  
**impact absorbers**; front forks; grip tapes; shoe  
soles; electromagnetic shields; piezoelec. materials)
- IT 9003-55-8  
(styrene-butadiene **rubber**, energy conversion compns.  
for **vibration-damping** materials and coatings;  
sound-absorbing materials, sheets, foams, and fibers;  
**impact absorbers**; front forks; grip tapes; shoe  
soles; electromagnetic shields; piezoelec. materials)

=> d 167 1-13 cbib abs hitstr hitind

L67 ANSWER 1 OF 13 HCA COPYRIGHT 2003 ACS on STN

135:20977 **Vibration-damping** acrylic coating

compositions useful for sheets in automobile, construction materials and electronic appliances. Ohira, Yasuyuki; Hori, Mitsuo (Shishiai-Kabushikigaisha, Japan). PCT Int. Appl. WO 2001040391 A1 20010607, 15 pp. DESIGNATED STATES: W: JP. (Japanese). CODEN: PIXXD2. APPLICATION: WO 1999-JP6786 19991202.

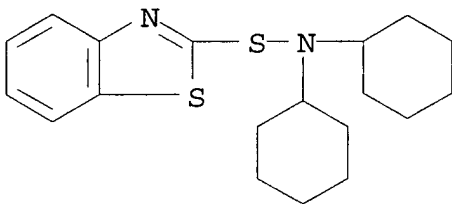
AB The compns. contain: (A) 100 parts acrylic polymer which can be homopolymer of acrylate or methacrylate or copolymers of acrylate, methacrylate or/and styrene, and (B) 10-100 parts **dipole moment-enhancing** and **vibration** energy-**absorbing** active components selected from compds. contg. **benzothiazyl**, **benzotriazole**, **diphenylacrylate** or benzophenone groups.

IT 4979-32-2

(**dipole moment-enhancing** agent/  
**vibration** energy-**absorbing** agent;  
**vibration-damping** acrylic sheet coating  
compns.)

RN 4979-32-2 HCA

CN 2-Benzothiazolesulfenamide, N,N-dicyclohexyl- (6CI, 7CI, 8CI, 9CI)  
(CA INDEX NAME)



IC ICM C09D133-04

ICS C09D005-00

CC 42-7 (Coatings, Inks, and Related Products)

ST acrylate methacrylate styrene acrylic coating compn

**vibration damping** sheet; **benzothiazole**

**dipole moment enhancing** active component

coating compn automobile; **benzotriazole vibration**

energy **absorbing** component coating compn construction

material; benzophenone active component coating compn elec appliance

IT **Vibrational** energy

(**absorbing** using an active component for acrylic  
coating compns.)

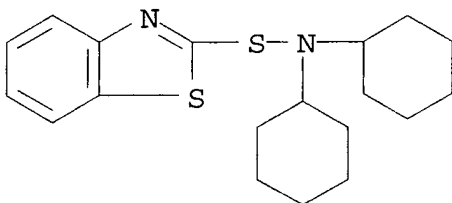
IT Acrylic polymers, uses

(**vibration-damping** acrylic sheet coating  
compns.)

IT Coating materials

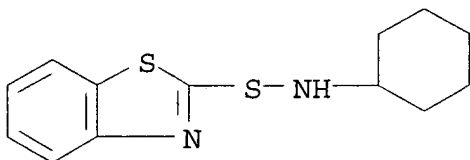
(**vibration-damping**; **vibration-**  
**damping** acrylic sheet coating compns.)

- IT 4979-32-2  
(dipole moment-enhancing agent/  
vibration energy-absorbing agent;  
vibration-damping acrylic sheet coating  
compns.)
- L67 ANSWER 2 OF 13 HCA COPYRIGHT 2003 ACS on STN  
134:327650 Resins for **vibration-damping** steel  
plates. Ohira, Yasuyuki; Hori, Mitsuo (Shishiai-Kabushikigaisha,  
Japan). PCT Int. Appl. WO 2001032776 A1 20010510, 14 pp.  
DESIGNATED STATES: W: JP. (Japanese). CODEN: PIXXD2.  
APPLICATION: WO 1999-JP6096 19991101.
- AB Title resins are polyesters contg. **dipole moment  
improvers**. A 70:30 Vylon and N-  
**dicyclohexylbenzotriazyl-2-sulphenamide** mixt. was formed  
into a 0.2-mm sheet, which was clad with 2 0.5-mm steel plates to  
form a laminate showing tan.delta. of 0.08-0.27 at -20.degree. to  
+30.degree..
- IT 4979-32-2  
(dipole moment improver-contg.  
polyester sheet and steel plate laminates for **vibration  
dampers**)
- RN 4979-32-2 HCA  
CN 2-Benzothiazolesulfenamide, N,N-dicyclohexyl- (6CI, 7CI, 8CI, 9CI)  
(CA INDEX NAME)



- IC ICM C08L067-00  
ICS B32B015-08; C08K005-07; C08K005-10; C08K005-3475; C08K005-47
- CC 38-3 (Plastics Fabrication and Uses)  
Section cross-reference(s): 55
- ST dicyclohexylbenzotrizylsulphenamide polyester sheet steel laminate  
**vibration damper**
- IT Laminated materials  
**Vibration dampers**  
(dipole moment improver-contg.  
polyester sheet and steel plate laminates for **vibration  
dampers**)
- IT Polyesters, uses  
(dipole moment improver-contg.  
polyester sheet and steel plate laminates for **vibration  
dampers**)
- IT **Dipole moment**  
(improver; dipole moment

- improver-contg. polyester sheet and steel plate laminates for vibration dampers)**
- IT 119-61-9, Benzophenone, uses 4979-32-2  
(**dipole moment improver-contg. polyester sheet and steel plate laminates for vibration dampers)**)
- IT 9020-32-0 9020-73-9, Poly(ethylene naphthalate) 24936-69-4, Poly(1,4-cyclohexanedimethylene terephthalate) 24968-12-5, PBT polymer 24980-41-4, Caprolactone homopolymer 25037-99-4, 1,4-Cyclohexanedimethanol-terephthalic acid copolymer 25038-59-9, PET polymer, uses 25248-42-4, Polycaprolactone 26062-94-2, 1,4-Butylene glycol-terephthalic acid copolymer 26099-71-8, p-Hydroxybenzoic acid homopolymer, sru 28779-82-0 30729-36-3, p-Hydroxybenzoic acid homopolymer 52309-38-3 75139-65-0, Vylon  
(**dipole moment improver-contg. polyester sheet and steel plate laminates for vibration dampers)**)
- IT 12597-69-2, Steel, uses  
(**dipole moment improver-contg. polyester sheet and steel plate laminates for vibration dampers)**)
- L67 ANSWER 3 OF 13 HCA COPYRIGHT 2003 ACS on STN  
133:185511 Image forming apparatus. Ohira, Yasuyuki; Hori, Mitsuo (Shishiai-Kabushikigaisha, Japan). PCT Int. Appl. WO 2000049466 A1 20000824, 24 pp. DESIGNATED STATES: W: JP. (Japanese). CODEN: PIXXD2. APPLICATION: WO 1999-JP760 19990219.
- AB An image forming app. having a photosensitive drum, such as a copier, a facsimile device, a laser printer, an electrophotog. printer comprising LEDs, or a word processor. A silencer formed of pellets for molding a **vibration-damping** resin contg. a base resin, an active component for increasing the **dipole moment** of the base resin, and an inorg. filler is applied to the inner or outer periphery surface of a photosensitive drum of an image forming app. Therefore, the vibration of the photosensitive drum is damped and eliminated, realizing high-quality image and low noise.
- IT 95-33-0, Sanceler CM 9003-56-9, GA 704  
(electrophotog. image forming app. with **shock absorber** comprised of)
- RN 95-33-0 HCA  
CN 2-Benzothiazolesulfenamide, N-cyclohexyl- (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



RN 9003-56-9 HCA



CN 2-Propenenitrile, polymer with 1,3-butadiene and ethenylbenzene  
(9CI) (CA INDEX NAME)

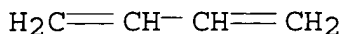
CM 1

CRN 107-13-1  
CMF C3 H3 N



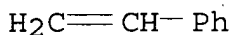
CM 2

CRN 106-99-0  
CMF C4 H6



CM 3

CRN 100-42-5  
CMF C8 H8



IC ICM G03G021-00  
ICS G03G005-10

CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic and  
Other Reprographic Processes)

ST image forming app electrophotog **shock absorber**

IT Electrophotographic apparatus

**Shock absorbers**

(electrophotog. image forming app. with **shock absorber**)

IT Mica-group minerals, uses

(electrophotog. image forming app. with **shock absorber** comprised of)

IT 95-33-0, Sanceler CM 9003-56-9, GA 704  
25747-74-4, S700N

(electrophotog. image forming app. with **shock absorber** comprised of)

L67 ANSWER 4 OF 13 HCA COPYRIGHT 2003 ACS on STN

132:36712 Damping self-adhesive. Ohira, Yasuyuki; Hori, Mitsuo  
(Shishiai-Kabushikigaisha, Japan). PCT Int. Appl. WO 9964535 A1  
19991216, 22 pp. DESIGNATED STATES: W: JP. (Japanese).  
CODEN: PIXXD2. APPLICATION: WO 1998-JP2518 19980605.

AB A damping self-adhesive capable of **absorbing** and

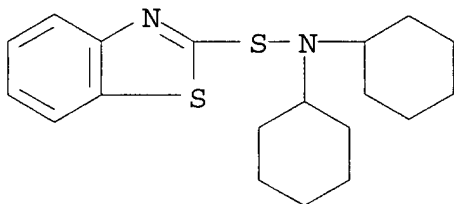
**damping vibrations** propagating to machines, equipment, structures, etc., or vibrations occurring from the machines, equipment, structures, etc., when applied to various machines, equipment, structures, etc., such as automobiles, home elec. appliances, precision equipment, construction machines, and structures and buildings, characterized by comprising a polymer and active components for **enhancing the dipole moment** of the polymer.

IT 4979-32-2 5232-99-5 59129-18-9

(for prepg. damping self-adhesive capable of **absorbing** and **damping vibrations** propagating to machines and equipment and structures or vibrations occurring from machines and equipment and structures)

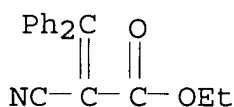
RN 4979-32-2 HCA

CN 2-Benzothiazolesulfenamide, N,N-dicyclohexyl- (6CI, 7CI, 8CI, 9CI)  
(CA INDEX NAME)



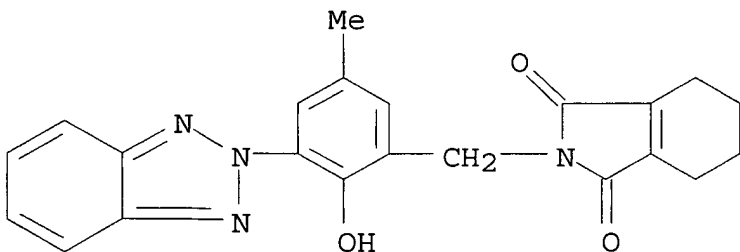
RN 5232-99-5 HCA

CN 2-Propenoic acid, 2-cyano-3,3-diphenyl-, ethyl ester (9CI) (CA INDEX NAME)



RN 59129-18-9 HCA

CN 1H-Isoindole-1,3(2H)-dione, 2-[[3-(2H-benzotriazol-2-yl)-2-hydroxy-5-methylphenyl]methyl]-4,5,6,7-tetrahydro- (9CI) (CA INDEX NAME)



IC ICM C09J009-00

ICS F16F015-00

CC 38-3 (Plastics Fabrication and Uses)

- ST damping self adhesive **dipole moment enhancement** acrylic polymer; **vibration damper** acrylic polymer
- IT **Vibration dampers**  
(for prepg. damping self-adhesive capable of **absorbing** and **damping vibrations** propagating to machines and equipment and structures or vibrations occurring from machines and equipment and structures)
- IT Acrylic polymers, uses  
(for prepg. damping self-adhesive capable of **absorbing** and **damping vibrations** propagating to machines and equipment and structures or vibrations occurring from machines and equipment and structures)
- IT **4979-32-2 5232-99-5 59129-18-9**  
178464-04-5, Oribain BHS 8515 252254-06-1, BPS 5375  
(for prepg. damping self-adhesive capable of **absorbing** and **damping vibrations** propagating to machines and equipment and structures or vibrations occurring from machines and equipment and structures)

L67 ANSWER 5 OF 13 HCA COPYRIGHT 2003 ACS on STN

130:325632 Comparison of the Solubility of PVF and PVDF in Supercritical CH<sub>2</sub>F<sub>2</sub> and CO<sub>2</sub> and in CO<sub>2</sub> with Acetone, Dimethyl Ether, and Ethanol. Lora, Michele; Lim, Jong Sung; McHugh, Mark A. (Istituto di Impianti Chimici, Universita di Padova, Padua, I-35131, Italy). Journal of Physical Chemistry B, 103(14), 2818-2822 (English) 1999. CODEN: JPCBFK. ISSN: 1089-5647. Publisher: American Chemical Society.

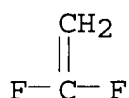
AB Cloud-point data are reported at temps. to 245 .degree.C and pressures to 2700 bar for poly(vinyl fluoride) (PVF) and poly(vinylidene fluoride) (PVDF) in CO<sub>2</sub>, CH<sub>2</sub>F<sub>2</sub>, di-Me ether (DME), acetone, and ethanol and in mixts. of CO<sub>2</sub> with acetone, DME, and ethanol. PVF does not dissolve in CO<sub>2</sub> even at 245 .degree.C and 2700 bar, but PVF does dissolve in CH<sub>2</sub>F<sub>2</sub> at 180 .degree.C and pressures in excess of 1500 bar. To dissolve PVF in DME, pressures in excess of 550 bar and temps. in excess of 130 .degree.C are needed although it only takes .apprx.100 bar to maintain a single phase to temps. of .apprx.220 .degree.C with ethanol and acetone. Compared to the conditions needed to dissolve PVF, it takes hundreds of bar less pressure to dissolve PVDF in CO<sub>2</sub>, CH<sub>2</sub>F<sub>2</sub>, and DME and .apprx.60 bar less pressure to dissolve it in acetone, but it does take .apprx.60 bar more pressure to dissolve it in ethanol. With CO<sub>2</sub>, ethanol is a better cosolvent than acetone for both fluoropolymers at high temps. and at low ethanol concns. However, when the temp. is decreased or the ethanol concn. is increased, it acts as an antisolvent probably due to ethanol self-assocn. Compared to ethanol and acetone, DME is not as good a cosolvent more than likely as a result of its lower d. and smaller **dipole moment**. For all three cosolvents, their **impact** on the **redn.** of the cloud-point pressure diminishes with increasing cosolvent concn. It is also evident that CO<sub>2</sub> is an effective antisolvent since small amts. of it added to the

polymer-cosolvent mixts. greatly increase the pressures needed to obtain a single phase.

IT 24937-79-9, Poly(vinylidene fluoride)  
 (comparison of the soly. of PVF and PVDF in supercrit. CH<sub>2</sub>F<sub>2</sub> and CO<sub>2</sub> and in CO<sub>2</sub> with acetone, di-Me ether, and ethanol)  
 RN 24937-79-9 HCA  
 CN Ethene, 1,1-difluoro-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 75-38-7  
 CMF C2 H2 F2



CC 36-7 (Physical Properties of Synthetic High Polymers)  
 IT 64-17-5, Ethanol, properties 67-64-1, Acetone, properties 75-10-5, Difluoromethane 115-10-6, Dimethyl ether 124-38-9, Carbon dioxide, properties 24937-79-9, Poly(vinylidene fluoride) 24981-14-4, Poly(vinyl fluoride)  
 (comparison of the soly. of PVF and PVDF in supercrit. CH<sub>2</sub>F<sub>2</sub> and CO<sub>2</sub> and in CO<sub>2</sub> with acetone, di-Me ether, and ethanol)

L67 ANSWER 6 OF 13 HCA COPYRIGHT 2003 ACS on STN

127:226621 An **improved dipole moment** model

for the intensities of the **vibrational absorption** of XY<sub>4</sub> near the local mode limit. Liao, Jie-Lou; Zhu, Qing-Shi (Department of Chemical Physics, University of Science and Technology of China, Hefei, Anhui, 230026, Peop. Rep. China). Chemical Physics Letters, 274(4), 328-334 (English) 1997. CODEN: CHPLBC. ISSN: 0009-2614. Publisher: Elsevier.

AB A bond-bond coupling **dipole** model is discussed for the absorption of the local-mode vibrations of XY<sub>4</sub> (Y = H, D). In this model the interaction between individual bonds is considered and cross terms occur in the **dipole moment**. The general forms of the coupling parameters .alpha.ii, .beta.ij, .chi.ij for XY<sub>4</sub> are reported and their values for the mols. (X = Si, Ge) are calcd. This model is tested with exptl. intensity data for silane and germane, and the results agree. The reason for the (3000) band of silane or (4000) band of germane being much weaker than the (2100) band of silane or (3100) band of germane can be explained with this model.

CC 73-3 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

ST **dipole moment** model vibration tetrahedral mol

IT Simulation and Modeling, physicochemical  
 (**dipole moment, improved;** for intensities of **vibrational absorption** of tetrahedral mols. near local mode limit)

- IT Vibrational spectroscopy  
(**improved dipole moment** model for intensities of tetrahedral mols. near local mode limit)
- IT **Dipole moment**  
(**improved** model for intensities of **vibrational absorption** of tetrahedral mols. near local mode limit)
- IT 7782-65-2, Germane 7803-62-5, Silane, properties 13537-06-9, Germane-d4 13537-07-0, Silane-d4 37634-92-7, Silane-28Si 51081-32-4, Silane-d4,28Si 63344-82-1, Germane-74Ge 63344-84-3, Germane-70Ge 76772-10-6, Germane-72Ge 90095-21-9, Silane-29Si 90095-22-0, Silane-30Si 105855-12-7, Stannane-118Sn 105855-14-9, Stannane-120Sn 195124-26-6, Germane-d4-72Ge  
(**improved dipole moment** model for intensities near local mode limit of)
- L67 ANSWER 7 OF 13 HCA COPYRIGHT 2003 ACS on STN  
124:301381 Electron-**vibrational suppression** of magnetic-**dipole** electronic transitions in MeF<sub>2</sub>:Tm<sup>2+</sup> crystals. Ignatev, I. V.; Ovsyankin, V. V. (Physics Department, St. Petersburg State University, St. Petersburg, 198904, Russia). Proceedings of SPIE-The International Society for Optical Engineering, 2706 (Spectroscopy of Crystals Activated by Rare-Earth and Transitional-Metal Ions), 142-8 (English) 1996. CODEN: PSISDG. ISSN: 0277-786X. Publisher: SPIE-The International Society for Optical Engineering.
- AB Electronic transitions between the Stark components of 2F<sub>7/2</sub> and 2F<sub>5/2</sub> terms in 4f<sup>13</sup> configuration are obsd. in the CaF<sub>2</sub>:Tm<sup>2+</sup> and SrF<sub>2</sub>:Tm<sup>2+</sup> absorption and luminescence spectra. The transitions are magnetic **dipole**. Theor. anal. in LSJ representation allows detn. of the relation between electronic transition probabilities. Exptl. relations between obsd. transition probabilities are estd. using vibronic sideband integral intensity of the .GAMMA.7 .tautm. .GAMMA.7' transition for normalization. The theor. results vary from the exptl. ones. The anal. of discrepancy possible reasons was performed. Suppression of the .GAMMA.7 .tautm. .GAMMA.7 transition is assocd. with the resonant reabsorption of radiation. Suppression of .GAMMA.7 .tautm. .GAMMA.8' transition in absorption is caused by intensity transfer to vibronic transitions due to the interaction of Tm<sup>2+</sup> with the even .GAMMA.3g and .GAMMA.5g vibrations. Degree of this suppression was evaluated in the framework of electrostatic approxn. Results of the calcn. are in agreement with the exptl. ones.
- CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)  
Section cross-reference(s): 75
- IT Magnetic **moment**  
(electron-**vibrational suppression** of electronic transitions in thulium-doped calcium and strontium fluorides crystals by)
- IT Energy level transition  
(electronic, magnetic **dipole**; electron-**vibrational suppression** in thulium-doped

- calcium and strontium fluorides crystals)
- IT 16910-52-4, Thulium(2+), uses  
(electron-**vibrational suppression** in calcium  
and strontium fluorides crystals doped with)
- IT 7783-48-4, Strontium fluoride 7789-75-5, Calcium fluoride,  
properties  
(electron-**vibrational suppression** in  
thulium-doped crystals of)
- L67 ANSWER 8 OF 13 HCA COPYRIGHT 2003 ACS on STN  
120:335773 Encapsulation of a segmented diamond compact. Frazee, Ronald  
L. (General Electric Co., USA). Brit. UK Pat. Appl. GB 2270493 A1  
**19940316**, 20 pp. (English). CODEN: BAXXDU. APPLICATION:  
GB 1993-18659 19930906. PRIORITY: US 1992-943646 19920911.
- AB A diamond compact which comprises .gtoreq.2 interlocking segments of  
thermally stable, polycryst. diamond encapsulated with a diamond  
film is provided, where the diamond segments are bound to form a  
composite mass which is overcoated with a diamond film. The diamond  
film provides added shear strength and an **enhanced bending  
moment** to the compact. The segments can also be comprised  
of diamond particles of different av. grain size to provide  
improvements in **impact resistance** and abrasion  
resistance in tools used for drilling and mining. These compacts  
can be prepd. by cutting diamond clusters to provide complementary  
surfaces, bonding these surfaces together to form 1 composite mass,  
and overcoating the mass with a diamond layer by CVD.
- IC ICM B24D003-00  
ICS C23C016-26
- ICA E21B010-46
- CC 75-1 (Crystallography and Liquid Crystals)
- L67 ANSWER 9 OF 13 HCA COPYRIGHT 2003 ACS on STN  
111:40218 Librational motion in macromolecules and low-temperature  
.delta.-relaxation. Ryzhov, V. A.; Bershtein, V. A. (Fiz.-Tekh.  
Inst. im. Ioffe, Leningrad, USSR). Vysokomolekulyarnye Soedineniya,  
Seriya A, 31(3), 451-7 (Russian) **1989**. CODEN: VYSAAF.  
ISSN: 0507-5475.
- AB Anal. of the long-wavelength IR spectra of linear polymers,  
oligomers, and low-mol.-wt. liqs. was used for detn. of potential  
barriers to **hindered torsional vibrations**  
(libration) of polymer chains, side groups, and mols. of the liqs.  
The torsional vibrations in polymers were of an intermol. (cohesive)  
nature and corresponded to the activation energy of low-temp.  
.beta.-relaxation. The .beta.-relaxation is caused by libration of  
an atom group close in size to the monomer unit of a macromol.
- IT **9002-86-2, PVC**  
(librational motion of, .beta.-relaxation in relation to)
- RN 9002-86-2 HCA
- CN Ethene, chloro-, homopolymer (9CI) (CA INDEX NAME)

CRN 75-01-4  
CMF C2 H3 Cl

H<sub>2</sub>C=CH-Cl

CC 36-2 (Physical Properties of Synthetic High Polymers)

IT Inertia

(**moment** of, of libration of linear polymers,  
.beta.-relaxation in relation to)

IT 9002-84-0, PTFE **9002-86-2**, PVC 9002-88-4,  
Polyethylene 9002-89-5, Poly(vinyl alcohol) 9003-07-0,  
Polypropylene 9003-21-8, Poly(methyl acrylate) 9003-53-6,  
Polystyrene 9011-14-7, PMMA 9022-52-0, Poly(chlorostyrene)  
24981-14-4, Poly(vinyl fluoride) 25014-31-7, Poly(.alpha.-  
methylstyrene) 25014-41-9, Polyacrylonitrile 25322-68-3,  
Poly(ethylene oxide) 26838-55-1, Poly(pentafluorostyrene)  
(librational motion of, .beta.-relaxation in relation to)

L67 ANSWER 10 OF 13 HCA COPYRIGHT 2003 ACS on STN

95:116311. Studies on the Charpy impact values of linear-polymer materials. Uemura, Yukio (Gov. Ind. Res. Inst., Osaka, Ikeda, Japan). Osaka Kogyo Gijutsu Shikensho Hokoku (358), 1-139 (Japanese) **1981**. CODEN: OKGHA5. ISSN: 0472-1438.

AB The phys. significance of the Charpy impact values used in practical evaluation. of plastics was studied. The effects of measuring conditions, e.g., shapes and dimensions of the test specimens, on Charpy impact values were detd. The effects of notch depth (0.1-5.0 mm) as well as the radius of the notched point (0-2.0 mm) were very great as detd. with 7 kinds of plastics. The behavior of rigid **poly(vinyl chloride)** [**9002-86-2**

] articles in deformation and brittleness fracture was examd. by high-speed photog. Energy absorption in the Charpy impact test was equal to the energy of strain directly before fracture, i.e. the energy of elastic deformation stored up in the test specimen to that **moment**. Charpy impact values were analyzed theor. in relation to to various parameters and an equation was derived. The problem of similarity was treated for values obtained with test specimens larger or smaller than std. test specimens. Various problems were discussed in actual measurement of Charpy impact according to procedures specified in several industrial stds.

IT **9002-86-2**

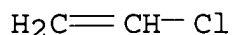
(Charpy impact values of, phys. significance of)

RN 9002-86-2 HCA

CN Ethene, chloro-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 75-01-4  
CMF C2 H3 Cl



CC 36-5 (Plastics Manufacture and Processing)  
 ST Charpy **impact resistance** plastic; **PVC**  
 Charpy **impact resistance**; theory Charpy impact  
 plastic; std Charpy impact plastic  
 IT **9002-86-2**

(Charpy impact values of, phys. significance of)

L67 ANSWER 11 OF 13 HCA COPYRIGHT 2003 ACS on STN

91:221159 Quadrupole mass spectrometer launched on geophysical rocket  
 Vertical 7. Todorean, G.; Ristoiu, D.; Mercea, V.; Istomin, V.  
 (Inst. Izot. Mol. Technol., Cluj-Napoca, Rom.). Revue Roumaine de  
 Physique, 24(7), 685-90 (English) **1979**. CODEN: RRPQAN.  
 ISSN: 0035-4090.

AB The quadrupole mass spectrometer built at the Institute for Isotopic  
 and Mol. Technol., Cluj-Napoca, and launched on the Vertical 7  
 geophys. rocket, is described. The mass spectrometer is housed in  
 an Al box (188 .times. 145 .times. 165 mm), and electronic  
 components are packaged in epoxy resin to **reduce**  
**vibration** and linear **acceleration** at the  
**moment** of launch. Further, the total wt. of the mass  
 spectrometer (6110 g) was distributed as follows: mass analyzer and  
 radio-frequency generator 3050 g, electronic unit 2280 g, connection  
 cables 380 g, and electrometer 40 g. The spectrometer performed  
 well in flight.

CC 76-11 (Electric Phenomena)

L67 ANSWER 12 OF 13 HCA COPYRIGHT 2003 ACS on STN

80:134049 Transparent, **impact-resistant** vinyl  
 chloride polymers. Gutmann, Walter; Nicolet, Rene (Lonza Ltd.).  
 Ger. Offen. DE 2328577 **19740110**, 26 pp. (German). CODEN:  
 GWXXBX. APPLICATION: DE 1973-2328577 19730605.

AB Transparent **impact-resistant** vinyl chloride (II)  
 polymers were prep'd. by the graft emulsion polymn. at 50-70.deg. of  
 I, or a monomer mixt. contg. .geq.80% I, with a Bu or ethylhexyl  
 acrylate-.alpha.-methylstyrene copolymer aq. dispersion (in amts. to  
 give 5-10% acrylate monomer unit in the end polymer). The particle  
 diam. in the copolymer dispersion was 30-120 m.mu.. Thus, Bu  
 acrylate-.alpha.-methylstyrene copolymer dispersion (particle diam.  
 58 m.mu.), prep'd. by emulsion polymn. at 70.deg. and contg. 76.9%  
 acrylate, was graft polymd. with I at 59.deg. to give a product  
 contg. 17.1% acrylate and having haze (1 nm disc) 10%, Brabender  
**moment** of rotation 3.2 mkg, notch impact strength 48.0  
 kgcm/cm2, and Vicat softening temp. 67.deg..

IC C08F

CC 35-3 (Synthetic High Polymers)

ST polymn graft **PVC** polyacrylate; impact strength grafted  
**PVC**; transparency acrylate **PVC** copolymer

IT Polymerization



(emulsion graft, of vinyl chloride on acrylate-methylstyrene polymer, for improved **impact resistance** and transparency)

L67 ANSWER 13 OF 13 HCA COPYRIGHT 2003 ACS on STN

76:60611 Flexible cushion-packaging material. Rubens, Louis C. (Dow Chemical Co.). U.S. US 3616158 **19711026**, 5 pp. (English). CODEN: USXXAM. APPLICATION: US 1968-758509 19680909.

AB Flexible cushion-packaging materials were manufd. by sealing together upper and lower layers of polyethylene [**9002-88-4**], polystyrene [**9003-53-6**], or polypropylene [**9003-07-0**] film in a diamond, rectangular, or circular pattern to form a plurality of individual compartments or packets and encapsulating in each compartment particles of an expandable thermoplastic resin. The particles in their nonexpanded condition occupied a small vol. so the composite material could be tightly rolled for shipment or storage. When the material was to be used, it was passed into a heating zone, i.e. between the electrodes of a high-frequency dielec. heating unit, to cause rapid expansion of the particles to a low density cellular state and provide a material suitable for cushioning and **shock absorbing** applications. The expandable particles consisted of a copolymer of a polar vinyl monomer having **dipole moment** .geq.2 Debyes, i.e. citraconic anhydride, ethyl acrylate, or .beta.-hydroxyethyl acrylate, and a vinyl aromatic monomer, i.e. o-chlorostyrene, styrene, vinyltoluene, or 3,4-dichlorostyrene. The copolymer contained small org. polar mols. having **dipole moment** .geq.3 Debyes.

IT **9002-88-4 9003-07-0 9003-53-6**

(packaging packets, contg. expandable acrylic compd.-styrene deriv. polymers)

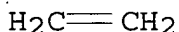
RN 9002-88-4 HCA

CN Ethene, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 74-85-1

CMF C2 H4



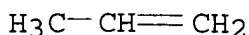
RN 9003-07-0 HCA

CN 1-Propene, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 115-07-1

CMF C3 H6



RN 9003-53-6 HCA  
CN Benzene, ethenyl-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 100-42-5

CMF C8 H8

$\text{H}_2\text{C}=\text{CH}-\text{Ph}$

IC B32B

NCL 161127000

CC 37 (Plastics Fabrication and Uses)

IT 9002-88-4 9003-07-0 9003-53-6

(packaging packets, contg. expandable acrylic compd.-styrene  
deriv. polymers)

=> d 168 1-9 cbib abs hitstr hitind

L68 ANSWER 1 OF 9 HCA COPYRIGHT 2003 ACS on STN

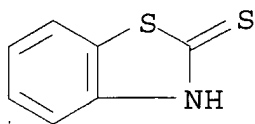
130:253399 Fire-resistant and soundproof double layered pipe. Ohira,  
Yasuyuki; Hori, Mitsuo (Shishiai-Kabushikigaisha, Japan). PCT Int.  
Appl. WO 9917048 A1 19990408, 32 pp. DESIGNATED STATES:  
W: JP. (Japanese). CODEN: PIXXD2. APPLICATION: WO 1997-JP3538  
19971001.

AB The pipe which can be used for the piping of a water supply/drain  
system, an air conditioner, etc. of a building comprises an outer  
layer, a fire-resistant inner layer and an intermediate sound  
absorbing layer which contains an active component (e.g., N,N-  
**dicyclohexylbenzothiazole-2-sulphenamide**) to increase the  
**dipole moment** value between the inner pipe and the  
fire-resistant layer. The pipe has an unprecedented excellent  
sound-proof performance.

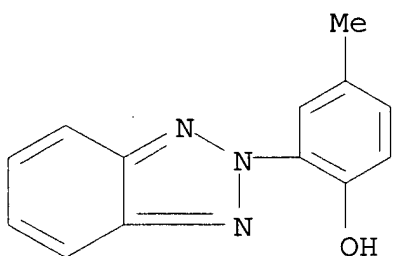
IT 149-30-4, 2-Mercaptobenzothiazole  
2440-22-4, 2-{2'-Hydroxy-5'-methylphenyl}  
benzotriazole 3864-99-1 3896-11-5  
4074-77-5, Dibenzothiazolyl sulfide  
4979-32-2 5232-99-5, Ethyl-2-cyano-3,3-  
diphenyl acrylate 59129-18-9,  
2-[2-Hydroxy-3-(3,4,5,6-tetrahydrophthalimidomethyl)-5-methylphenyl]  
benzotriazole  
(fire-resistant and soundproof double layered pipe)

RN 149-30-4 HCA

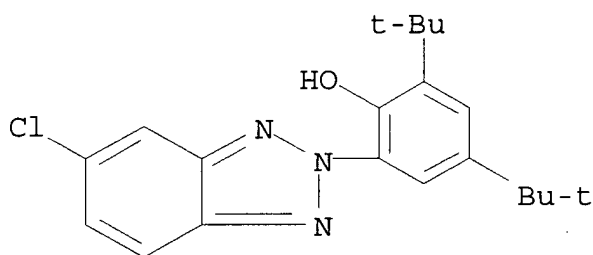
CN 2(3H)-Benzothiazolethione (9CI) (CA INDEX NAME)



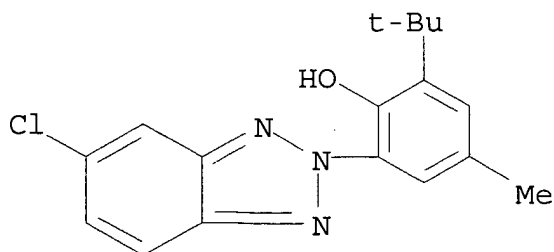
RN 2440-22-4 HCA  
 CN Phenol, 2-(2H-benzotriazol-2-yl)-4-methyl- (9CI) (CA INDEX NAME)



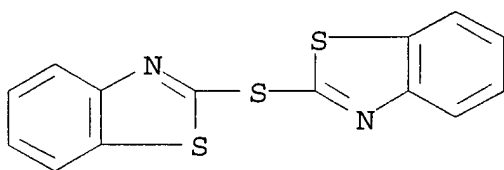
RN 3864-99-1 HCA  
 CN Phenol, 2-(5-chloro-2H-benzotriazol-2-yl)-4,6-bis(1,1-dimethylethyl)- (9CI) (CA INDEX NAME)



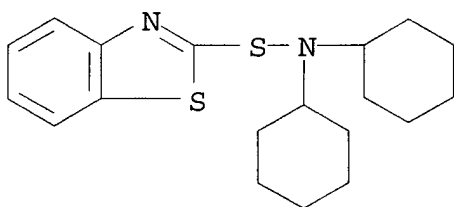
RN 3896-11-5 HCA  
 CN Phenol, 2-(5-chloro-2H-benzotriazol-2-yl)-6-(1,1-dimethylethyl)-4-methyl- (9CI) (CA INDEX NAME)



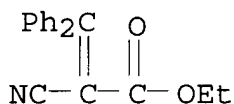
RN 4074-77-5 HCA  
 CN Benzothiazole, 2,2'-thiobis- (7CI, 8CI, 9CI) (CA INDEX NAME)



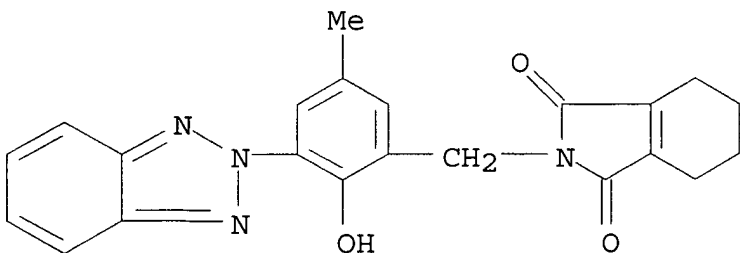
RN 4979-32-2 HCA  
 CN 2-Benzothiazolesulfenamide, N,N-dicyclohexyl- (6CI, 7CI, 8CI, 9CI)  
 (CA INDEX NAME)



RN 5232-99-5 HCA  
 CN 2-Propenoic acid, 2-cyano-3,3-diphenyl-, ethyl ester (9CI) (CA  
 INDEX NAME)

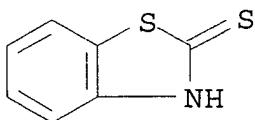


RN 59129-18-9 HCA  
 CN 1H-Isoindole-1,3(2H)-dione, 2-[[3-(2H-benzotriazol-2-yl)-2-hydroxy-5-methylphenyl]methyl]-4,5,6,7-tetrahydro- (9CI) (CA INDEX NAME)

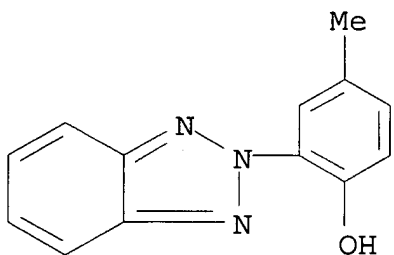


IC ICM F16L055-02  
 ICS C08K005-47; C08K005-3475; C08K005-10; C08L101-00  
 CC 38-3 (Plastics Fabrication and Uses)  
 ST soundproof fire resistant double layer pipe; water supply drain pipe  
 sound insulation; **cyclohexylbenzothiazole** active agent  
 soundproof fireproof pipe; **dipole moment** active  
 agent

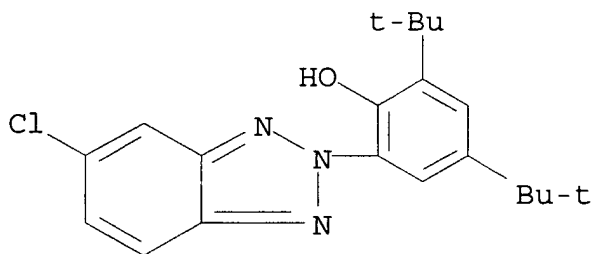
- IT Air conditioners  
**Dipole moment**  
 Fire-resistant materials  
 Sound insulators  
**Vibration dampers**  
 Water distribution systems  
 (fire-resistant and soundproof double layered pipe)
- IT 149-30-4, 2-Mercaptobenzothiazole  
 2440-22-4, 2-{2'-Hydroxy-5'-methylphenyl}  
 benzotriazole 3864-99-1 3896-11-5  
 4074-77-5, Dibenzothiazolyl sulfide  
 4979-32-2 5232-99-5, Ethyl-2-cyano-3,3-  
 diphenyl acrylate 59129-18-9,  
 2-[2-Hydroxy-3-(3,4,5,6-tetrahydrophthalimidomethyl)-5-methylphenyl]  
 benzotriazole  
 (fire-resistant and soundproof double layered pipe)
- L68 ANSWER 2 OF 9 HCA COPYRIGHT 2003 ACS on STN  
 130:253398 Soundproof double layered pipe. Ohira, Yasuyuki; Hori,  
 Mitsuo (Shishiai-Kabushikigaisha, Japan). PCT Int. Appl. WO 9917047  
 A1 19990408, 33 pp. DESIGNATED STATES: W: JP.  
 (Japanese). CODEN: PIXXD2. APPLICATION: WO 1997-JP3475 19970929.
- AB The pipe which can be used for the piping of a water supply/drain  
 system, an air conditioner, etc., of a building, comprises an outer  
 and an inner layer and an intermediate sound absorbing layer which  
 contains an active component (e.g., N,N-  
**dicyclohexylbenzothiazole-2-sulphenamide**) to increase the  
**dipole moment** value between the inner pipe and the  
 outer pipe.
- IT 149-30-4, 2-Mercaptobenzothiazole  
 2440-22-4, 2-{2'-Hydroxy-5'-methylphenyl}  
 benzotriazole 3864-99-1 3896-11-5  
 4074-77-5, Dibenzothiazolyl sulfide  
 4979-32-2 5232-99-5, Ethyl-2-cyano-3,3-  
 diphenyl acrylate 59129-18-9,  
 2-[2-Hydroxy-3-(3,4,5,6-tetrahydrophthalimidomethyl)-5-methylphenyl]  
 benzotriazole  
 (soundproof double layered pipe)
- RN 149-30-4 HCA  
 CN 2(3H)-Benzothiazolethione (9CI) (CA INDEX NAME)



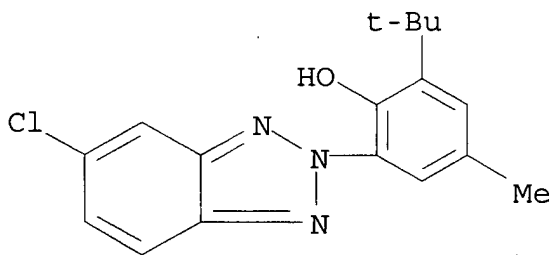
- RN 2440-22-4 HCA  
 CN Phenol, 2-(2H-benzotriazol-2-yl)-4-methyl- (9CI) (CA INDEX NAME)



RN 3864-99-1 HCA

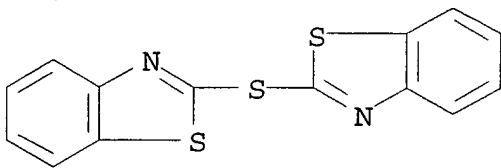
CN Phenol, 2-(5-chloro-2H-benzotriazol-2-yl)-4,6-bis(1,1-dimethylethyl)-  
(9CI) (CA INDEX NAME)

RN 3896-11-5 HCA

CN Phenol, 2-(5-chloro-2H-benzotriazol-2-yl)-6-(1,1-dimethylethyl)-4-  
methyl- (9CI) (CA INDEX NAME)

RN 4074-77-5 HCA

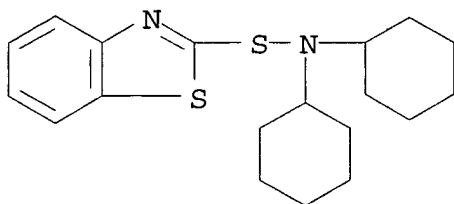
CN Benzothiazole, 2,2'-thiobis- (7CI, 8CI, 9CI) (CA INDEX NAME)



RN 4979-32-2 HCA

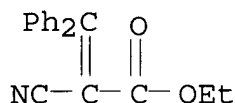
CN 2-Benzothiazolesulfenamide, N,N-dicyclohexyl- (6CI, 7CI, 8CI, 9CI)

(CA INDEX NAME)



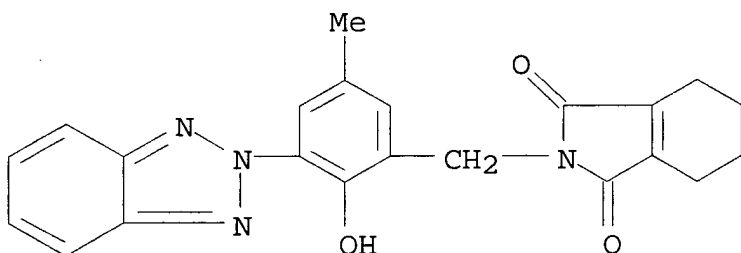
RN 5232-99-5 HCA

CN 2-Propenoic acid, 2-cyano-3,3-diphenyl-, ethyl ester (9CI) (CA INDEX NAME)



RN 59129-18-9 HCA

CN 1H-Isoindole-1,3(2H)-dione, 2-[[3-(2H-benzotriazol-2-yl)-2-hydroxy-5-methylphenyl]methyl]-4,5,6,7-tetrahydro- (9CI) (CA INDEX NAME)



IC ICM F16L055-02

ICS C08K005-47; C08K005-3475; C08K005-10; C08L101-00

CC 38-3 (Plastics Fabrication and Uses)

Section cross-reference(s): 37

ST soundproof double layer pipe; water supply drain pipe sound insulation; **cyclohexylbenzothiazole** active agent  
soundproof pipe; **dipole moment** active component

IT Air conditioners

**Dipole moment**

Sound insulators

**Vibration dampers**

Water distribution systems

(soundproof double layered pipe)

IT 149-30-4, 2-Mercaptobenzothiazole

2440-22-4, 2-{2'-Hydroxy-5'-methylphenyl}

**benzotriazole** 3864-99-1 3896-11-5

4074-77-5, Dibenzothiazolyl sulfide

4979-32-2 5232-99-5, Ethyl-2-cyano-3,3-

**diphenyl acrylate 59129-18-9,**  
**2-[2-Hydroxy-3-(3,4,5,6-tetrahydrophthalimidomethyl)-5-methylphenyl]**  
**benzotriazole**  
(soundproof double layered pipe)

L68 ANSWER 3 OF 9 HCA COPYRIGHT 2003 ACS on STN

127:177154 Mechanisms of vibrational and electronic excitations of polystyrene films in high resolution electron energy loss spectroscopy. Botelho do Rego, A. M.; Rei Villar, M.; Lopes da Silva, J. (Centro quimica-Fisica Mol., Complexo Interdisciplinar-Inst. Superior Tecnico, Lisbon, P-1096, Port.). Journal of Electron Spectroscopy and Related Phenomena, 85(1,2), 81-91 (English) 1997. CODEN: JESRAW. ISSN: 0368-2048. Publisher: Elsevier.

AB High resoln. electron energy loss spectroscopy (HREELS) was used to study vibrational and electronic excitations induced by electrons ion polystyrene thin films cast on silicon substrates. In order to deduce the nature of the interaction mechanisms involved, differential cross-sections of vibrational and electronic excitations were measured as a function of the incident electron energy and of the geometrical configuration of the expt. Vibrational excitations were compared with the very strong bands of IR and Raman spectra. Losses produced by impact interaction correspond mostly to Raman active modes; those produced by **dipole** interaction correspond mostly to IR active modes. Electronic excitations leading to triplet or singlet excited states and having const. widths around 0.7 eV were detected. In this case, pronounced resonance mechanisms are involved, mainly in geometrical configurations far from specular conditions, showing the existence of transient neg. ions centered at the maxima found for the excitation functions. The resonant mechanisms decline as specular conditions are reached. Losses having widths increasing with incident energy are assigned to interband transitions. Finally, structures at fixed kinetic energies, appearing in all spectra, are assocd. with the relaxation of slow electrons occupying conduction band levels with high d. of states before escaping to the vacuum.

IT 9003-53-6, Polystyrene  
(mechanisms of vibrational and electronic excitations of polystyrene films in high-resoln. electron energy loss spectroscopy)

RN 9003-53-6 HCA

CN Benzene, ethenyl-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 100-42-5

CMF C8 H8

H<sub>2</sub>C=CH-Ph

CC 37-5 (Plastics Manufacture and Processing)



IT Excited singlet state  
 Excited singlet state  
 Excited triplet state  
 Excited triplet state  
 Optical **absorption**  
 Quasiparticles and Excitations  
 (mechanisms of **vibrational** and electronic excitations  
 of polystyrene films in high-resoln. electron energy loss  
 spectroscopy)

IT 9003-53-6, Polystyrene  
 (mechanisms of vibrational and electronic excitations of  
 polystyrene films in high-resoln. electron energy loss  
 spectroscopy)

L68 ANSWER 4 OF 9 HCA COPYRIGHT 2003 ACS on STN  
 124:88659 Modification of PP/SAN blends. Radonjic, G.; Musil, V. (EPF,  
 Maribor, Slovenia). Kovine, Zlitine, Tehnologije, 29(1-2), 243-6  
 (Slovenian) 1995. CODEN: KZLTET. ISSN: 1318-0010.  
 Publisher: Zelezarna Jesenice.

AB Properties of isotactic polypropylene (PP) can be improved by addn.  
 of other polymers to PP. Polymer blend PP/SAN polymer is immiscible  
 and it shows a decrease in some mech. properties, but processing and  
 some other properties can be improved. Addn. of an impact modifier  
 can also change the final properties of the PP/SAN blends. As a  
 modifier we used styrene-ethylene-butylene triblock copolymer (SEBS)  
 (Kraton G 1650). Blends were prepd. in the melt in a Brabender  
 kneading chamber, cooled and then compression-molded into sheets.  
 We investigated the influence of the addn. of SEBS on the processing  
 properties (torque **moment**), mech. properties (notched  
 impact strength), as well as the morphol. properties with SEM. The  
 binary PP/SAN and ternary PP/SAB/SEBS blends are compared.

IT 9003-54-7, SAN polymer  
 (modification of polypropylene-SAN polymer blends)

RN 9003-54-7 HCA

CN 2-Propenenitrile, polymer with ethenylbenzene (9CI) (CA INDEX NAME)

CM 1

CRN 107-13-1

CMF C3 H3 N



CM 2

CRN 100-42-5

CMF C8 H8



CC 37-5 (Plastics Manufacture and Processing)  
Section cross-reference(s): 39

IT **Impact-resistant** materials  
(polypropylene-SAN polymer blends modified with rubber)

IT 9003-54-7, SAN polymer 25085-53-4, Isotactic polypropylene  
(modification of polypropylene-SAN polymer blends)

L68 ANSWER 5 OF 9 HCA COPYRIGHT 2003 ACS on STN

117:28022 Talc-filled propylene polymers. Tomomatsu, Ryuzo; Fukuda, Takumasa; Sugawara, Minoru (Idemitsu Petrochemical Co., Ltd., Japan). Eur. Pat. Appl. EP 476926 A2 **19920325**, 21 pp.  
DESIGNATED STATES: R: BE, DE, FR, GB, IT, NL. (English). CODEN: EPXXDW. APPLICATION: EP 1991-308316 19910911. PRIORITY: JP 1990-239927 19900912; JP 1990-247243 19900919.

AB Blow-moldable compns., useful for automobile bumper beams, contain 1-30 parts talc (particle diam. .ltoreq.5 .mu.m, av. aspect ratio 3-20), 70-99 parts isotactic polypropylene or 1.5-15:85-98.5 ethylene-propylene copolymer [melt index (MI) .ltoreq.1 g/10 min, isotactic pentad content in propylene moiety .gtoreq.93%], and optionally, HDPE (MI .ltoreq.0.1 g/10 min, A = Z50/Z10 = 2-20; Z10 and Z50 = const. strain rate elongation viscosity at strain rate 0.05/s and **moments** 10 and 50 s, resp.) or rubber (complex viscosity 30,000-1,000,000 P at frequency 0.01 Rad/s). The waste from the blow molding was recyclable. Thus, a compn. contg. 90 parts 3:97 ethylene-propylene block copolymer (I, MI 0.6 g/10 min, isotactic pentad content 95%) and 10 parts talc (particle diam. 1.5 .mu.m, av. aspect ratio 15) exhibited similar blow moldability but better **impact resistance** as a blow-molded bumper beam as a similar compn. contg. 17:83 I with MI 0.3 g/10 min and isotactic pentad content 96% instead of the above-described I.

IT 9002-88-4, HDPE  
(isotactic propylene polymer blends with, talc-filled, blow-moldable, for automobile bumper beams)

RN 9002-88-4 HCA

CN Ethene, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 74-85-1

CMF C2 H4

H<sub>2</sub>C=CH<sub>2</sub>

IC ICM C08L023-10  
ICS C08K003-34

CC 37-6 (Plastics Manufacture and Processing)

ST talc filled propylene polymer; blow moldable filled propylene polymer; automobile bumper filled propylene polymer; ethylene propylene copolymer blow moldable; isotactic polypropylene talc filled; **impact resistant** filler propylene

- polymer; recycling propylene polymer molding waste
- IT Automobiles  
(bumper beams for, **impact-resistant**  
blow-moldable talc-filled isotactic propylene polymers as)
- IT **Impact-resistant** materials  
(talc-filled isotactic propylene polymers as, blow-moldable, for  
automobile bumper beams)
- IT 9002-88-4, HDPE  
(isotactic propylene polymer blends with, talc-filled,  
blow-moldable, for automobile bumper beams)
- L68 ANSWER 6 OF 9 HCA COPYRIGHT 2003 ACS on STN
- 112:186359 Hydrogen adsorption on the .beta.-nitrogen-covered tungsten  
(100) surface: an infrared study of the tungsten-hydrogen stretch.  
Riffe, D. M.; Sievers, A. J. (Mater. Sci. Cent., Cornell Univ.,  
Ithaca, NY, 14853-2501, USA). Physical Review B: Condensed Matter  
and Materials Physics, 41(6), 3406-25 (English) 1990.  
CODEN: PRBMDO. ISSN: 0163-1829.
- AB The adsorption of H on the c(2 .times. 2) .beta.-N-covered W(100)  
surface was studied with IR and thermal-desorption spectroscopies.  
A new **dipole-active vibrational**  
**absorption** due to chemisorbed H was discovered. Its center  
frequency (1738 cm<sup>-1</sup> for minimal H<sub>2</sub> adsorption), isotopic dependence  
(1252 cm<sup>-1</sup> for D<sub>2</sub> adsorption and the existence of both lines for HD  
adsorption), absorption strength vs. .beta.-N coverage, and  
effective dynamic charge  $e^*/\epsilon_{\infty}$  .gtoreq. 0.12e lead to  
the assignment of the W-H stretch assocd. with a top-bonded H  
species. The vibration was studied in detail on the highly ordered  
surface characterized by a .beta.-N coverage of 0.5 monolayer. In  
the zero-coverage limit, vibrational decay due to electron-hole pair  
excitations may provide the dominant contribution to the full width  
at half max. of 12 cm<sup>-1</sup>. Away from this limit, inhomogeneous  
broadening, caused by coadsorption of mol. and other at. species,  
appears to increasingly contribute to the width, which attains a  
max. of 35 cm<sup>-1</sup> at satn. Isotopic diln. and H-coverage expts.  
reveal a dynamical shift of +14 cm<sup>-1</sup> in going from the isolated  
adatom to full layer limit which is explained by a combination of  
direct **dipole-dipole** and indirect  
electron-mediated interactions. With increasing coverage, 2 chem.  
shifts have also been discerned, a pos. one (+21 cm<sup>-1</sup>) attributed to  
electron-d. competition among the adsorbed at. species and a neg.  
one (-17 cm<sup>-1</sup>) due to mol.-species coadsorption. Low-temp.  
annealing produces an increase in barrier height to parallel motion  
from the on-top site, apparently caused by the filling of more  
tightly bound sites near the remaining on-top H. The concurrent  
constancy of the W-H vibrational frequency indicates that the  
potential well perpendicular to the surface is not drastically  
altered by this rearrangement of adatoms.
- IT 17778-88-0, Atomic nitrogen, properties  
(adsorbed hydrogen on tungsten covered with, IR spectral study  
of)
- RN 17778-88-0 HCA

CN Nitrogen, atomic (8CI, 9CI) (CA INDEX NAME)

N

CC 66-3 (Surface Chemistry and Colloids)

Section cross-reference(s): 73

IT 17778-88-0, Atomic nitrogen, properties

(adsorbed hydrogen on tungsten covered with, IR spectral study of)

L68 ANSWER 7 OF 9 HCA COPYRIGHT 2003 ACS on STN

97:73294 Properties of piezoelectric poly(vinylidene fluoride) films irradiated by .gamma.-rays. Wang, T. T. (Bell Lab., Murray Hill, NJ, 07974, USA). Ferroelectrics, 41(1-2-3-4), 213-23 (English) 1982. CODEN: FEROA8. ISSN: 0015-0193.

AB The influence of .gamma.-ray irradiation on short-term and long-term properties of uniaxially stretched and poled poly(vinylidene fluoride) [24937-79-9] films was investigated. Significant improvements were observed in the high-temp. retention characteristics of both piezoelectric properties and film dimensions in the irradiated samples. Stress relaxation tests at elevated temps. revealed that the inverse relaxation (or stress buildup) behavior commonly observed in uniaxially stretched polymers was suppressed markedly by irradiation. The film showed a steady decrease in its tensile strength with increasing dose and became embrittled in the direction perpendicular to the initial draw direction as the .gamma.-dose exceeded 50 Mrad. The structural changes in the irradiated films were probed by means of differential scanning calorimetry, x-ray diffraction, and gel-fraction analysis. The data indicated that the improvement of thermal stability was associated with the formation of crosslinks in the polymer; the slower piezoelectric decay in the irradiated films was caused by the crosslinks in the crystalline region, which impeded the relaxation of molecular dipoles and charge trapping sites, while the enhanced dimensional stability was primarily due to crosslinking in the amorphous region, which resisted the action of retractive force induced by the entropic effect of oriented molecules.

IT 24937-79-9

(properties of poled uniaxially stretched films of, .gamma.-irradiation effect on)

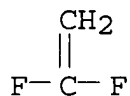
RN 24937-79-9 HCA

CN Ethene, 1,1-difluoro-, homopolymer (9CI) (CA INDEX NAME)

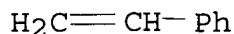
CM 1

CRN 75-38-7

CMF C2 H2 F2



- CC 37-5 (Plastics Manufacture and Processing)  
Section cross-reference(s): 76
- ST gamma ray piezoelec polydifluoroethene property; crosslinking gamma ray piezoelec polydifluoroethene; fluoropolymer piezoelec property gamma ray; heat **resistance piezoelec** polyvinylidene fluoride; dimensional stability piezoelec polyvinylidene fluoride
- IT **24937-79-9**  
(properties of poled uniaxially stretched films of, .gamma.-irradn. effect on)
- L68 ANSWER 8 OF 9 HCA COPYRIGHT 2003 ACS on STN  
91:158422 Stress whitening of **impact-resistant** polystyrene. Burr, August (Kunststofftechnikum, Tech. Univ. Berlin, Berlin, D-1000/21, Fed. Rep. Ger.). Plastverarbeiter, 30(8), 439-44 (German) 1979. CODEN: PLARAN. ISSN: 0032-1338.
- AB Stress whitening of rubber-modified polystyrene (I) [ **9003-53-6**] depends above all on the content of low-mol. wt. substances in the product. High lubricant content increases the stress whitening sensitivity considerably. Sample temp. at the **moment** of deformation has a similar effect, and higher temps. (.ltoreq. Tg) favor stress whitening formation, esp. in injection-molded parts during the demolding phase. Obviously the mobility of matrix mol. chains is a significant factor in the origin of crazes. A high rubber content contributes to a decrease in macroscopic stress whitening. No correlation between stress whitening and **impact resistance** of rubber-modified I has been established.
- IT **9003-53-6**  
(**impact-resistant**, crazing of, lubricant and rubber content and temp. effect on)
- RN 9003-53-6 HCA
- CN Benzene, ethenyl-, homopolymer (9CI) (CA INDEX NAME)
- CM 1
- CRN 100-42-5
- CMF C8 H8



- CC 36-5 (Plastics Manufacture and Processing)
- ST crazing **impact resistant** polystyrene; stress whitening impact polystyrene
- IT Lubricants

Rubber, synthetic

(in **impact-resistant** polystyrene, crazing in relation to)

IT Molding of plastics and rubbers

(injection, of **impact-resistant** polystyrene, crazing in)

IT 9003-53-6

(**impact-resistant**, crazing of, lubricant and rubber content and temp. effect on)

L68 ANSWER 9 OF 9 HCA COPYRIGHT 2003 ACS on STN

58:3827 Original Reference No. 58:643f-h,644a Chemically stable, mercury-impermeable hard rubber tiles. Shokhin, I. A.; Kutsenok, B. I. Vestn. Tekhn. i Ekon. Inform. Nauchn.-Issled. Inst. Tekhn.-Ekon. Issled. Gos. Kom. Sov. Min. SSSR po Khim. (No. 2), 77-9 From: Ref. Zh., Khim. 1962, Abstr. No. 8P398. (Unavailable) 1961.

AB A procedure for making hard rubber tile from scrap rubber unuseable for reclaiming was developed and introduced into industry. A mixt. consisting of reclaim 60, asbestos fiber waste products 33.7, S 5.7, thiuram 0.4, and MBT 0.2 part was mixed for 10-12 hrs. in a cooled rubber mixer. The mixt. was milled on cold rolls for 5-6 min. to give sheets 12-14 mm. thick. Pieces were cut from these sheets and cured for 8-10 min. at 180-90.degree. to give tile 10 mm. thick and .ltoreq.300 mm. long. The finished tiles had an **impact resistance** of 7.2 kg./sq. cm., compression resistance of 634 kg./sq. cm., and abrasion resistance of 0.0047 g./sq. cm. They were heat resistant and had good dielec, properties and low heat cond. They were Hg-impermeable (detd. by the time intervals up to the **moment** of color change of a reagent paper) and resisted the action of .ltoreq.30% alkali, .ltoreq.90% org. acids, and .ltoreq.40% mineral acids (except for HNO3 and H3PO4) for 8 months at 20.degree.. The cost of 1 sq. m. of an exptl. lot of tiles was 70-5% of the av. cost of first-grade ceramic tiles (Metlakhskii). The tile could be adhered to a wood or concrete base with a mixt. of bitumen with silica sand, BF adhesive, Arzamite cement, and Na silicate soln. The bottom side of the tile should have a crosshatched or waffle-like surface for best adhesion. Industrial tests gave good results.

IT 9003-07-0, Propene polymers

(compounding, vulcanization and properties of)

RN 9003-07-0 HCA

CN 1-Propene, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 115-07-1

CMF C3 H6

$\text{H}_3\text{C}-\text{CH}=\text{CH}_2$

CC 49 (Rubber and Other Elastomers)

IT 9003-07-0, Propene polymers  
(compounding, vulcanization and properties of)

=> file hcaplus

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=> d l62 1-7 all

L62 ANSWER 1 OF 7 HCAPLUS COPYRIGHT 2003 ACS on STN  
AN 1998:423815 HCAPLUS  
DN 129:166378  
TI Molecular dynamics simulation of a carbon cluster ion  
**impacting** on a carbon surface  
AU **Aoki, Takaaki**; Seki, Toshio; Matsuo, Jiro; Insepov,  
Zinetulla; Yamada, Isao  
CS Ion Beam Eng. Exp. Lab., Kyoto Univ., Sakyo, Kyoto, 606-01, Japan  
SO Materials Chemistry and Physics (1998), 54(1-3), 139-142  
CODEN: MCHPDR; ISSN: 0254-0584  
PB Elsevier Science S.A.  
DT Journal  
LA English  
CC 65-4 (General Physical Chemistry)  
AB High-d. irradiation effects were studied by molecular dynamics simulations of fullerene (C60) **impacting** on a carbon surface. When a C60 ion with the incident energy of nearly 200 eV per atom **impacts** on the solid surface, an effect termed 'clearing-way (CW) effect' occurs. This effect is due to the high energy and coherency of incident atoms. The penetration depth of C60 is deeper than that of the carbon monomer (C1) with 200 eV because of the CW effect, but shallower than that of the carbon monomer with 12 keV (200 eV per atom x 60). This result is attributed to a second effect termed 'multiple-collision (MC) effect'. This effect is caused by a large number of collisions between the incident and surface atoms that occur at the **impact**, and these collisions transfer the larger component of the **momenta** of the cluster to the lateral direction, unlike the monomer ion **impact**. Therefore, the penetration depth is proportional to the cube root of the incident energy, and the stopping power is magnified compared with the carbon monomer. When the incident energy of the cluster increases, both the cross-section of the **impact** and the number of collisions decrease, the MC effect is reduced and the behavior of incident atoms becomes similar to that of the monomer ions. On the contrary, when the incident energy of a cluster is less than the threshold energy of implantation, a cluster dissociates on the solid surface without implantation and the MC effect does not occur. It is shown that the range of incident energy where C60 shows a non-linear **impact** effect is from about 100 eV per

atom to 2 keV per atom.  
ST mol dynamics fullerene **impact** carbon surface; multiple  
collision effect fullerene carbon surface; disson implantation  
fullerene carbon surface MD  
IT Clusters  
(carbon; mol. dynamics simulation of C60 ion **impacting**  
on carbon surface)  
IT Dissociation  
Ion implantation  
Kinetic energy  
Stopping power  
Surface  
(mol. dynamics simulation of C60 ion **impacting** on  
carbon surface)  
IT 7440-44-0, Carbon, properties 99685-96-8D, Fullerene-60, ion  
(mol. dynamics simulation of C60 ion **impacting** on  
carbon surface)  
IT 7782-40-3, Diamond, properties  
(surface; mol. dynamics simulation of C60 ion **impacting**  
on carbon surface)

RE.CNT 15 THERE ARE 15 CITED REFERENCES AVAILABLE FOR THIS RECORD  
RE

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L62 ANSWER 2 OF 7 HCAPLUS COPYRIGHT 2003 ACS on STN

AN 1998:290146 HCAPLUS

TI A new method to measure regional myocardial time-varying elastance  
using minute **vibration**

AU Shishido, Toshiaki; Sugimichi, Masaru; Kawaguchi, Osamu; Miyano,  
Hiroshi; Kawada, Toru; Matsuura, Wataru; Ikeda, Yasuhiro; **Sato,**  
**Takayuki**; Alexander, Joe, Jr.; Sunagawa, Kenji

CS Dep. Cardiovascular Dynamics, Natl. Cardiovascular Cent. Res. Inst.,  
Osaka, 565, Japan

SO American Journal of Physiology (1998), 274(4, Pt. 2),  
H1404-H1415

CODEN: AJPHAP; ISSN: 0002-9513

PB American Physiological Society

DT Journal



LA English

AB We developed a new technique to evaluate regional myocardial elastance using minute **vibration**. In 13 isolated cross-circulated canine hearts, we applied small sinusoidal **vibrations** of displacement to the left ventricular surface at various frequencies (50-100 Hz). Using the measured displacement and force between the **vibrator** head and myocardium, we derived myocardial elastance on the basis of the equation of motion for a given **moment** of the cardiac cycle. Simultaneous soln. of the equations of motion at different frequencies yielded a unique value of elastance. Time-varying myocardial elastance increased from diastole (0.028  $\pm$  0.021  $\times$  106 dyn/cm) to systole (0.833  $\pm$  0.391  $\times$  106 dyn/cm). The end-systolic elastance (ees) linearly correlated with end-systolic left ventricular elastance ( $r = 0.717$ ,  $P < 0.001$ ) and also with the end-systolic Young's modulus ( $r = 0.874$ ,  $P < 0.0001$ ). We also measured ees at both ischemic and nonischemic regions during coronary occlusion. Young's modulus, estd. by normalizing ees by the wall thickness and by the estd. mass, did not change significantly at the nonischemic regions, whereas it decreased significantly from 2.303  $\pm$  0.556 to 1.173  $\pm$  0.370  $\times$  106 dyn/cm<sup>2</sup> at the ischemic region after coronary occlusion ( $P < 0.005$ ). We conclude that this technique is useful for the quant. assessment of regional myocardial elastance.

RE.CNT 34 THERE ARE 34 CITED REFERENCES AVAILABLE FOR THIS RECORD  
RE

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L62 ANSWER 3 OF 7 HCAPLUS COPYRIGHT 2003 ACS on STN

AN 1998:129798 HCAPLUS

Correction of: 1997:812286

DN 128:131105

Correction of: 128:64970

TI Aluminum alloy structural parts with cast iron inserts

IN Kageyama, Nozumo; Itoh, Akichika; Tamura, Etsuroh; Kanno, Koki;  
**Aoki, Takahito; Sato, Terushige**

PA Hitachi Kinzoku K.K., Japan; Fuji Jukogyo K.K.

SO Ger. Offen., 16 pp.

CODEN: GWXXBX

DT Patent

LA German

IC ICM C22C037-00

ICS B22D019-00; C22C038-04; C22C038-08; C22C038-16; C22C021-04

CC 56-4 (Nonferrous Metals and Alloys)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE	
PI	DE 19721988	A1	19971204	DE 1997-19721988	19970526	<--
	DE 19721988	C2	19990902			
	JP 10071459	A2	19980317	JP 1997-150441	19970523	<--
	JP 3260099	B2	20020225			
	US 5976709	A	19991102	US 1997-862387	19970523	<--
	GB 2313564	A1	19971203	GB 1997-11226	19970530	<--
	GB 2313564	B2	19980805			
PRAI	JP 1996-160514	A	19960531			<--

AB Al alloy structural parts (esp. automobile parts) with a high **vibration**-damping ability contain cast iron inserts contg. flake graphite. The cast iron contains C 2.5-4.0, Si 2.0-3.5, and Mn 0.1-0.8%, and Al alloy contains Cu 2.0-4.0, Si 7-12, and Mn .1toeq.0.3%. Typically, the bainitic microstructure of cast iron contains 5-14% residual austenite. Structural parts are produced by casting of the Al alloy around the cast iron insert and by cooling within 10 s to .1toeq.400.degree.. The structural parts are less susceptible to generate noise caused by **vibrations**.

ST aluminum structural part cast iron insert

IT **Vibration** dampers

(aluminum alloy structural parts with cast iron inserts with improved)

IT Automobiles

(parts; aluminum alloy structural parts with cast iron inserts for)

IT 200339-22-6 200339-26-0 200339-31-7 200339-36-2 200339-39-5  
200339-42-0

(aluminum alloy structural parts with cast iron inserts with improved **vibration** damping)

L62 ANSWER 4 OF 7 HCAPLUS COPYRIGHT 2003 ACS on STN

AN 1997:812286 HCAPLUS

DN 128:64970

TI Aluminum alloy structural parts with cast iron inserts

IN Kageyama, Nozumo; Tamura, Etsuroh; Kanno, Koki; **Aoki, Takahito; Sato, Terushige; Sato, Terushige**

PA Hitachi Kinzoku K. K., Japan; Fuji Jukogyo K. K.

SO Ger. Offen., 16 pp.

CODEN: GWXXBX

DT Patent

LA German

IC ICM C22C037-00

ICS B22D019-00; C22C038-04; C22C038-08; C22C038-16; C22C021-04

CC 56-4 (Nonferrous Metals and Alloys)

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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PI DE 19721988 A1 19971204 DE 1997-1972198819970526

PRAI JP 1996-160514 19960531

AB Al alloy structural parts (esp. automobile parts) with a high **vibration**-damping ability contain cast iron inserts contg. flake graphite. The cast iron contains C 2.5-4.0, Si 2.0-3.5, and Mn 0.1-0.8%, and Al alloy contains Cu 2.0-4.0, Si 7-12, and Mn .1 to req. 0.3%. Typically, the bainitic microstructure of cast iron contains 5-14% residual austenite. Structural parts are produced by casting of the Al alloy around the cast iron insert and by cooling within 10 s to .1 to req. 400.degree.. The structural parts are less susceptible to generate noise caused by **vibrations**.

ST aluminum structural part cast iron insert

IT **Vibration** dampers

(aluminum alloy structural parts with cast iron inserts with improved)

IT Automobiles

(parts; aluminum alloy structural parts with cast iron inserts for)

IT 200339-22-6 200339-26-0 200339-31-7 200339-36-2 200339-39-5  
200339-42-0

(aluminum alloy structural parts with cast iron inserts with improved **vibration** damping)

L62 ANSWER 5 OF 7 HCAPLUS COPYRIGHT 2003 ACS on STN

AN 1991:590831 HCAPLUS

DN 115:190831

TI Effect of ion **vibration** for proton-transfer reaction of ammonia cation

AU Tachibana, A.; Suzuki, T.; Teramoto, Y.; Yoshida, N.; **Sato, T.**; Yamabe, T.

CS Fac. Eng., Kyoto Univ., Kyoto, 606, Japan

- SO Journal of Chemical Physics (1991), 95(6), 4136-41  
CODEN: JCPSA6; ISSN: 0021-9606
- DT Journal
- LA English
- CC 67-3 (Catalysis, Reaction Kinetics, and Inorganic Reaction Mechanisms)  
Section cross-reference(s): 65
- AB Ion **vibration** gives rise to a new pulsing **dipole moment** which affects the long-range interaction with the target mol. This pulsing long-range interaction mechanism has been applied to the proton-transfer reaction  $\text{NH}_3^+ (\text{v}) + \text{NH}_3 \rightarrow \text{NH}_2 + \text{NH}_4^+$  in which the **vibrational** mode-specific depression of the reaction rate is obsd. Significance of the **vibrationally** induced **dipole moment** of  $\text{NH}_3^+ (\text{v})$  has been clarified in such a way that the origin of the depression is ascribed to the interaction of this pulsing **dipole moment** with the permanent **dipole moment** of  $\text{NH}_3$ . The results of calcn. agree qual. with the exptl. result (1968).
- ST ion **vibration** proton transfer ammonia; pulsing **dipole moment** ion **vibration**; ammonia cation proton transfer ammonia mol
- IT Protonation and Proton transfer reaction  
(between ammonia and ammonia cation, effect of ion **vibration** on)
- IT Molecular **vibration**  
(of **vibrationally** excited ammonia cation, proton-transfer reaction between ammonia and ammonia cation in relation to)
- IT Energy level  
(**vibrational** excited, proton transfer between ammonia ion in, and ammonia)
- IT 19496-55-0, Ammonia(1+)  
(proton-transfer reaction between ammonia and, effect of ion **vibration** on)
- IT 7664-41-7, Ammonia, reactions  
(proton-transfer reaction between ammonia cation and, effect of ion **vibration** on)
- IT 12408-02-5  
(protonation and Proton transfer reaction, between ammonia and ammonia cation, effect of ion **vibration** on)
- L62 ANSWER 6 OF 7 HCAPLUS COPYRIGHT 2003 ACS on STN
- AN 1980:84235 HCAPLUS
- DN 92:84235
- TI RF plugging of laser-produced plasma in a cusp field
- AU Sato, T.; Kumazawa, R.; Sato, K. N.; Watari, T.; Okamura, S.; Ichimura, M.; Hidekuma, S.; Fukagawa, T.; Aoki, T.; et al.
- CS Inst. Plasma Phys., Nagoya Univ., Nagoya, Japan
- SO Nuclear Fusion (1979), Volume Date 1978, (Plasma Phys. Controlled Nucl. Fusion Res., v2), 401-10

CODEN: NUFUAU; ISSN: 0029-5515

DT Journal  
LA English  
CC 71-1 (Nuclear Technology)  
Section cross-reference(s): 73  
AB The radio-frequency (RF) plugging scheme was applied to confine a laser-produced plasma from a polyethylene [9002-88-4] target in a spindle cusp field (TPD-III). All the cusp ends are plugged by RF fields, electrostatic mode at line cusp, and **electromagnetic** mode at point cusps. The dependence of the plugging effect on the RF voltages (0-3 kV) and the frequencies (around the local ion cyclotron frequencies) was systematically investigated. The particle confinement time was directly obtained from the d. decay at the center of the confinement region. The RF plugs can evidently increase the particle confinement time by a factor of 5 (from 19 .mu.s without RF to 95 .mu.s with RF), for a plasma at d. (3-6) .times. 10<sup>13</sup> cm<sup>-3</sup> and ion temp. 15-35 eV. The application of RF fields results in a 4-fold increase in ion temp. The energy confinement time was also measured, and a sizeable improvement was found for the RF plugged plasma.  
ST radiofrequency plugging laser plasma fusion; cusp plasma  
radiofrequency plugging  
IT Laser radiation, chemical and physical effects  
(plasma generated by, in cusp field, radio-frequency plugging of)  
IT Radio wave  
(plugging by, of laser-produced plasma in cusp field)  
IT Plasma  
(laser-induced, radio-frequency plugging of, in cusp field)  
IT Nuclear fusion  
(plasma, laser-induced, radio-frequency plugging of, in cusp field)  
IT 9002-88-4P  
(plasma prodn. from laser irradiation of, radio-frequency plugging of, in cusp field)  
  
L62 ANSWER 7 OF 7 HCAPLUS COPYRIGHT 2003 ACS on STN  
AN 1971:427694 HCAPLUS  
DN 75:27694  
TI Splitting of the TO [transverse optical] mode in calcite by the polarization field  
AU Ishigame, Mareo; **Sato, Tsutomu**; Sakurai, Takemaro  
CS Res. Inst. Sci. Meas., Tohoku Univ., Sendai, Japan  
SO Physical Review B: Solid State (1971), [3]3(12), 4388-91  
CODEN: PLRBAQ; ISSN: 0556-2805  
DT Journal  
LA English  
CC 73 (Spectra by Absorption, Emission, Reflection, or Magnetic Resonance, and Other Optical Properties)  
AB This paper described an investigation of the behavior of an iractive Eu mode of the internal **vibrations** in a calcite crystal when a wave vector is inclined at an angle .theta. to the crystallog. c axis. Theoretical considerations reveal that the

polarization field splits the Eu mode into 2 components which have **dipole moments** with orthogonal polarizations  $P_{||}$  and  $P_{\perp}$ , and that the value of  $\omega_{TO}(P_{||})$  changes with  $\theta$ , while the values of  $\omega_{LO}(P_{||})$ ,  $\omega_{TO}(P_{\perp})$ , and  $\omega_{LO}(P_{\perp})$  remain unchanged (LO = longitudinal optical). In order to see whether or not this prediction is valid, the values of the above frequencies for various values of  $\theta$  were obtained by analyzing the reststrahlen bands obsd. in 5 specimens with reflecting surfaces of  $\theta$  equal to 0, 24.5, 44.5, 65.5, and 90.degree., which were accordance with the curves given by theoretical calcn.

- ST transverse optical mode calcite; polarization field splitting optical mode
- IT Optical reflection  
(by calcite, splitting of phonon modes by polarization field in relation to)
- IT Phonons  
(splitting of modes of, in calcite by polarization field)
- IT 13397-26-7  
(optical reflection by, splitting of phonon modes by polarization fields in relation to)